A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATERFOOT THERAPY ON ADULTS WITH FEVER ADMITTED IN RAGHAV HOSPITAL, APPAKUDAL, ERODE DISTRICT.

By 301611553

Dissertation Submitted to the

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IN

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DharmarathnakaraDr.Mahalingam Institute of Paramedical Sciences & Research,

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ENDORSEMENT BY THE PRINCIPAL/HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled**"A study to evaluate the effectiveness of warm water foot bath therapy on adults with fever admitted in Raghav Hospital, Appakudal, Erode District**" is a bonafide research work done by**Miss.Nisha.R** under the guidance of Associate**Prof.Mrs.G.JulietNirmala Mary, M.Sc., (Nursing), Reader cum Head of the Department of Medical Surgical Nursing, DharmarathanakaraDr.Mahalingam Institute of Paramedical Sciences and Research, Sakthi Nagar, BhavaniTaluk, Erode District.**

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LIST OF ABBREVIATION USED

Et.al	And Other
χ^2	Chi-Square Test
DMIPSR	Dharmarathnakara Dr. Mahalingam Institute Of Paramedical Sciences & Research
Fig	Figure
HOD	Head Of The Department
M.Sc (N)	Master Of Science (Nursing)
NO	Number
%	Percentage
P	Probability
Prof	Professor
H_1	Research Hypothesis 1
H_2	Research Hypothesis 2
H_3	Research Hypothesis 3
SL	Serial
S.D	Standard Deviation
S	Significant
N	Total Number Of Samples

ABSTRACT

A quasi experimental study to evaluate the "**Effectiveness of warm water foot bath therapy on fever among adults with fever"** was undertaken by **Miss.R.Nisha** in partial fulfillment of the requirements for the Degree of Master of Science in Nursing under Dr. M.G.R. Medical University, Chennai.

OBJECTIVES

1. To assess the pretest and post test level of body temperature among adults with fever in the experimental group and control group.
2. To compare the changes in the temperature with experimental and control group after warm water foot bath therapy.
3. To determine the association of changes in temperature with selected demographic variables in both group.

METHODS

The research approach used for this study was evaluate approach and the research design wsa quasi experimental design.40 adults with fever,among that 20 in experimental group 20 in control group were selected for this study by using purposive sampling technique.Descriptive statistics (frequency,percentage,mean,and standard deviation) and inferential statistics (chi-square,paired`t` test & unpaired `t`test) were used to analyze the data and to lost hypothesis.

MAJOR FINDINGS OF THE STUDY

The study findings showed that in the experimental group,in pre test 6[30%] adults had low grade fever, 14[70%] adults had pyrexia. Whereas, in the post test 14[70%] adults had normal body temperature,6[30%] adults had low grade fever. In control group,inpre test 10[50%] adults had low grade fever 10[50%] adults had pyrexia. In post test 7[35%] adults had low grade fever,13[65%] adults had pyrexia. From the above finding it is clear that there has been a significant difference between pre and post test level of body temperature in adults with fever

The present study results revealed that among, the experimental group,the mean pre test score of temperature was 101.29 with standard deviation 0.752.whereas, the mean post test score of temperature was 98.87 with standard deviation of 0.5813.The obtained `t`

value 7.45 was significant at $p<0.05$ level.

In control group the mean pre test score of temperature was 100.5 with standard deviation 0.110.whereas, the mean post test score of temperature was 101.04 with standard deviation of 0.482.the obtained `t` value 4.437 was significant at $p<0.05$ level.

The study findings revealed that in experimental group there was no significant association the level of temperature among adults with fever and their selected demographic variable such as age, gender, religion, weight, height, BMI, no of hospitalization, is the patient taking antipyretic drug.

.The study findings revealed that in control group there was no significant association the level of temperature among adults with fever and their selected demographic variable such as age, gender, religion, weight, height, BMI, no of hospitalization, is the patient taking antipyretic drug.

CONCLUSION

The warm water footbath therapy is safer and more effective intervention during fever among adults with fever.The warm water footbath therapy maintains the level of body temperature and it is a cost effective with more comfort intervention during fever among adultsThe warm water footbath therapy was effective in reduction of body temperature in adults with fever and it enhances rapid reduction of increased body temperature along with standard care than paracetamal only.Warm water foot bath therapy has effect on improving circulation and stimulating the cord reflexes which is good for the recovery.

KEY WORDS: Effectiveness, Warm water foot bath therapy,Fever.

CHAPTER-1

INTRODUCTION

"The Ground Work off all happiness is Good Health"

Fever was first recognized as a human disease in Australia in 1935. Fever is also known as pyrexia and febrile response, which is defined as having a temperature above the normal range due to an increase in the body's temperature set point. A fever can be caused by many medical conditions ranging from the not serious to potentially serious condition.

-Tayl or Lillis Lynn

Fever is common symptom of adult illness. Fever is a natural response of the body that helps in fighting of foreign substances. Thermoregulatory center in the hypothalamus regulates body temperature. Once the temperature raises, the person often feels warm, the cellular metabolism increases, oxygen consumption rises, heart rate and respiratory rate increases to meet the metabolic needs of the body. Increased metabolism uses energy that produces additional heat. Fever is usually associated with physical discomfort, and most people feel better when a fever is treated. But depending on the age, physical condition, and the underlying cause of fever many experts believe that fever is a natural bodily defense against infection.

Yann-Fen Chao,(2009) Fever is a rectal temperature over 38^{o}c (100.4^{o}F) and an oral temperature of 37.8^{o}c (100^{o}F). During fever, dilation of internal blood vessels and constriction of peripheral blood vessels occurs. Hyperthermia is one of the most common reasons that adults seek medical attention for their health condition. It is estimated that fever is the primary complaint for 30% of adults seen by physicians.

Hyperthermia refers to the condition of having a body temperature greatly above normal. Hyperthermia is a common problem faced by medical practitioners, nurses and adults in both hospital and community settings.

During fever, dilation of internal blood vessels and constriction of peripheral blood vessels occurs. It weakens the adult and makes him/her uncomfortable and anxious. Therefore fever as a symptom and its management is a concern to both healthcare professionals as well as adults. Providing comfort to adult is a basic and most important

nursing intervention. Antipyretic therapy is an effective pharmacological measure to reduce fever. Along with pharmacological measures, many non-pharmacological measures are there. One of the non-pharmacological measures is complementary therapy, in that hydrotherapy is the effective one to reduce the fever. Hydrotherapy is one of the naturopathic treatment modality used widely in ancient cultures including India, Egypt, and China etc. Hydrotherapy is the external or internal use of water in any of its forms (water, ice, steam) for health promotion or treatment of various diseases with various temperature, pressure duration and site. The examples of hydro therapies are cold sponging, tepid sponging, external cooling, warm water therapy which were found to be effective in controlling the temperature.

NEED FOR THE STUDY

Fever however is not primary illness but a physiologic mechanism that has benefit effects of fighting infection. There is no evidence that fever itself worsens the cause of an illness or that it cause long term neurologic complications. Thus the primary good of treating the febrile adult should be to improve the adult over all comfort either than focus on the normalization of body temperature.

WHO (2010) states the lowest rate of hospitalization was 25% in 2002. The highest proportions of hospitalized cases were reported as 70% in 2007 and 2009. Fever is one of the most common reasons for a adult to be taken to see a doctor and it is the second most common reason for a adult to be admitted to hospital. Geographical distribution worldwide of fever which affects about six million people with more than 6, 00,000 deaths in a year. Almost 80% of cases of death occurs in Asia.

National Health Interview Survey the statistics of fever is endemic in India. In 2015 the health surveys conducted by the central ministry of health in the community development areas indicated a morbidity rate varying from 102 to 2,219 per 1,00,000 population in different parts of the country. The report of morbidity showed that in an urban slum 1% of children up to 17 years of age suffer from fever every year, more than 7,000 people mostly died across the country since 2010 because of fever.

The Hindu 2015 reported that about 64% of adults have been admitted in Government hospital with the symptoms of fever in all over the district of Tamil Nadu.

Rajeev Gupta (2008) fever is a common illness found among adults due to various causes. Fever occurs because heat loss mechanism is unable to keep pace with excess heat production, resulting in an abnormal rise in body temperature. The level at which fever threatens health is often a source of disagreement among health care providers. A fever is usually not harmful if it stays below 102^{o}F.

A true fever results from an alteration in the hypothalamic set point. Progeny such as bacteria and triggers the immune system more WBC's are produced to fight against infection. A mild temperature elevation up to 102^{o}F enhances body immune system and WBC production is stimulated. Increased temperature reduces the concentration often in the blood plasma, suppressing the growth of bacteria.

Although fever is beneficial for enhancing host defense, other factors such as the adults comfort and physiological response must be considered when fever occurs. Studies have shown that physiological manifestations during fever include increased oxygen consumption, increased heart rate, increased cardiac output, and elevated serum levels of catecholamine, increased cardio vascular and metabolic demands.

Although a fever could be considered any body temperature above the normal 98.6^{0}F (37^{0}c) medically, a person is not considered to have a significant fever until the temperature is above 100.4^{0}F. Most fever is beneficial causes no problems, and helps the body fight at infections. The main reason to treat a fever is to increase comfort.

Deupree, J.P (2015) stated that the fever management continues to be a significant challenge for adults and health care providers about the knowledge of fever management, and increased the confidence in their ability. There are various pharmacological and non-pharmacological measures available to manage fever. One of the pharmacological management for the fever is the administration of the antipyretics. It will provide immediate comfort to the adults but it is toxicity is a concern. Greater antipyretics efficacy has been shown to occur in adults given the combination compare with either drug alone. However there are potentially complicating problem, that make such a practice inadvisable is due to its side effect that is hepatotoxicity. A variety of non-pharmacological measures which is used to reduce fever which includes sponging with various solution, tepid water, alcohol, application of ice packs or cooling blankets, exposure to circulating fans and warm water foot bath therapy.

Department of health, India (2011) states that fever is endemic in 29 states. About 18,059 cases were reported with 119 deaths. The case facility rate was 0.65%.

In complementary therapies most of the intervention done on the sole of the foot based on cord reflex. The local application of temperature produces stimuli on cord reflex on the sole of the foot. These reactions are caused by local effect of temperature produces stimuli on cord reflex on the sole of the foot. These reactions are caused by local effect of temperature directly on the blood vessels and also by local cord reflex conducted from skin receptors to the spinal cord and back to the same skin area and the sweat gland. The intensity of this local effect is, in addition controlled by the central brain temperature controller. So that their overall effect is proportional to the hypothalamic heat control signal times to the local signal

Warm water foot bath therapy is one of the hydro therapeutic measures which improve warmth, promotes muscle relaxation, relives pain, dilates blood vessels, and promotes circulation and provide a soothing and healing effect. There are different non pharmacological and pharmacological methods to manage the fever in adult. But there will be certain complication like shivering and vasoconstriction may occur. The routine procedure tepid sponge is more discomfort during fever management in adults.

STATEMENT OF THE PROBLEM

A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATER FOOT BATH THERAPY ON ADULTS WITH FEVER ADMITTED IN RAGHAV HOSPITAL, APPAKUDAL, ERODE DISTRICT.

OBJECTIVES OF THE STUDY

1.To assess the pre test post test level of body temperature among adults with fever in the experimental group and control group.

2.To compare the changes in the temperature with experimental and control group after warm water foot bath therapy.

3.To determine the association of changes in temperature with selected demographic variables in both group.

RESEARCH HYPOTHESIS

H_1 : There will be a significant difference in the temperature between experimental and control group after warm water footbath therapy.

H_2 : There will be a significant association of changes in temperature of adult with selected demographic variables.

OPERATIONAL DEFINITION:

Evaluate:

In this study '**Evaluate'** refers to determine the level of body temperature among adult with before and after administration of warm water foot bath therapy.

Effectiveness: In this study '**Effectiveness'** refers to the ability of warm water foot bath therapy to bring changes in temperature(98.6^0 F) as measured by the investigator using a clinical thermometer.

Warm water foot bath therapy:

In this study, '**Warm water foot bath therapy'** refers to the immersion of adult feet and ankles in 100^0 F in warm water for 30 minutes.

Fever

In this study '**Fever'** refers to raise in body temperature an adult ranging from 99-105^0 F.

Adult

In this study **adult** is someone who has achieved the self concept of being responsible for their own life.

ASSUMPTION

- Fever may be result of several causes and it can be controlled by treating the underline infection.
- Warm water application leads vasodilation and thereby enhances the immune system to reduce infection.
- Warm water applicator may have some effect on body temperature.

LIMITATION

- This study is limited to adults admitted in Raghav Hospital, Erode District.

CHAPTER- II

REVIEW OF LITERATURE

A literature review is a written summary of the state of existing knowledge on a research problem. The task of reviewing literature involves the identification, selection, critical analysis and written description of existing information on a topic.

Polit, D.F. &Hugler B.P, (2006)

The review of literature is organized under the following headings

Section 1: Literature related to fever.

Section 2: Literature related to warm water foot bath therapy

Section 3: Literature related to studies on warm water foot bath therapy in reduction

of fever

LITERATURE RELATED TO FEVER

Potter-Perry [2017] stated that pyrexia or fever occurs because heatloss mechanisms are unable to keep body with excess heat production, resulting in an abnormal rise in body temperature. A fever is usually not harmful if it is stays below 39^{o}C [102.2^{o}F] in adults or 40^{o}cC [104^{o}F] in children. A single temperature reading does not always indicate a fever. A true fever results from an alteration in the hypothalamic set point. To meet the new set point the body produces and conserves heat. The adult experiences chills, shivers, and feels cold; even through the temperature is rising. Fever or pyrexia, is an important defense mechanism. Mild temperature elevate up to 39^{o}C [102.2F] enhance the body immune system by stimulating white blood cell production. Fever also serves a diagnostic purpose. Fever patterns differ depending on the causative pyrogen.

The type of fever the duration and degree of fever depends on the pyrogens strength and the ability of the individual to respond. The term fever of unknown origin [flu] refers to a fever whose etiology or causes cannot determine by the health care providers. Treatment for a fever depends on its cause, any adverse effects, the strength, intensity, and duration of the elevated temperature. The objective of fever therapy is to increase heat loss, reduce heat production, and prevent complications. Non drug therapies for fever are increase heat loss by evaporation, conduction, convection or radiation.

Antipyretics are drugs that reduce fever. Non pharmacological management such as hydrotherapy like sponging, cool environment, hot water therapy, and warm water foot bath therapy also provided for fever to maintain normal body temperature.

Taylor, Lillis (2016) Stated that the fever is a increase above normal (Considered to be 37^0 C or 98.6^0 F) in body temperature. A person with a fever is said to be febrile. Fever occurs in response to an optimum displacement of the thermo regulatory set point crypto kinas produced by pyegens (microorganism or substances that cause fever). Fever may also be the result of tissue injury such as from myocardial infarction, pulmonary emboli, cancer, trauma and surgery. Although the purpose of fever is not finally understood, it signals infection and increases immune function. The onset and significance of a fever from on illness differes by once age. The onset of a fever which can be sudden or gradual typically is more rapid in children than in adults.

Parthasarathy (2015) stated that the fever in adults is one of the mostcommon manifestations of an illness, which makes the adults seek medical attention early. Fever occurs when various infections and non-infectious processes interact with that host's defense mechanism. It is important that alladults with fever are carefully assessed to find the cause. Never the less causes remains undetermined in a significant percentage of cases, leading to the designation of FWF (fever without focus) and FUO (fever of unknown origin). But even with the etiology being determined, fever remains the overriding source of anxiety. The normal body temperature is maintained between a range of 36.8 + 0.4C (98.2 + 0.7^oF) with a circulation rhythm of lowest temp at 6.00am (37.2^0 C or 98.9^0F) and highest temperature of 37.7^0C or 99.9^0F at 4.00 pm. In general fever is considered to be present if rectal temperature is above 38.3^0C, oral temp is above 37.8^0C or auxiliary temperature is above 37^0C.

The cause of fever were acuter viral fever septicemia or bacteremia, vaccine associated fever, urinary tract infection, sinusitis, hyperthermia, occultbacteremia andkawasaki's disease etc. The investigation for fever were complete blood counts, urine routine, and urine C/S, and blood C/S lumbar puncture (if indicated). The treatment of fever depends upon the degree of fever that the fever of <40 degree there is no benefit of antipyretic therapy. The goal of the treatment is to correct fluid deficit and ensure that the adults fluid intake is adequate. The supportive therapy for fever were remove excess clothing or blankets and keep the adult in well ventilated room, Encourage to take extra fluid to

compensate for increase insensible fluid loss and to maintain blood flow necessary for heat dissipation, Discourage vigorous activities, Tepid sponging and warm water foot bath therapy.

Tambulwadkar (2013) stated that the fever is any abnormal elevationof the body temperature. The body temperature above 40^0C (104^0F) is called hyperpyrexia. In the state of high fever, cardiac output and oxygen consumption increases. Also, the respiration and pulse increase. Adult with hyperpyrexia may have headache, nausea, vomiting, and loss of appetite. They may get convulsions and may go into a delirium. If the body temperature is not lowered promptly to the normal level, it can cause brain damage. The causes of fever were Infection, Inflammatory diseases, Disturbances in temperature, regulating center, Dehydration and Effects of drugs of toxins. The symptoms of fever were increased the management of fever were started with complete bed rest and comfort measures provide to reduce fever. The non pharmacological management which may include hydrotherapy also will reduce the fever. The hydrotherapy was tepid sponging, hot water therapy and warm water foot bath therapy. Electrolyte balance should be maintained to prevent acidosis. Adequate fluids should be provided to relieve the thirst and treat the dehydration.

OP.GHAI (2012) Stated that the fever is a contrasted increase in bodytemperature over the normal values for an individual. The normal body temperature children are higher as compared to adult's exhibits a normal children thermal variation and varies between 36.1^0 C to 37.8^0C (97^0F -100^0F) on rectal measurement. There is a normal diurnal variation in the body temperature, it is lowest between 0 and 0600 hours and maximum between 1700 and 1900 hours. The core body temperature can be measured at several sites including the oral cavity, auxiliary, rectal, and ear canal and over the temporal artery.

Wongs (2011) stated that an elevated temperature most frequently fromfever but occasionally caused by hyperthermia is one of the most common symptoms of illness in adults.Body temperature is regulated by a thermostatic mechanism in the hypothalamus. This mechanism receives input from centrally and peripherally located receptors. When temperature changes occur, these receptors relay the information to the thermostat, which increase or degrees heat production to maintain a constant set point temperature. However, during an infection, progeny substances cause an increase in body; normal set

point, a process that is mediated by prostaglandins. Consequently, the hypothalamus increases heat production until the core temperature reaches the new set point.

The principal reason for treating fever is the relief of discomfort. Relief measures include pharmacologic or environmental intervention. The most effective intervention is the use of antipyretics to lower the set point. Traditional cooling measures, such as wearing minimum clothing, exposing the skin to the air, reducing room temperature, increasing air circulation, and applying cool, moist compresses are effective if employed approximately 1 hour after an antipyretic is given so that the set point is lowered. Cooling procedures such as sponging or tepid baths and hot therapy such as warm water foot bath therapy are also used to maintain normal body temperature.

Fallon, L (2010) stated that a healthy person's body temperaturefluctuates between 97°F (36.1°C) and 100°F (37.8°C), with the average being 98.6°F (37°C). The body maintains stability within this range by balancing the heat produced by the metabolism with the heat lost to the environment. The "thermostat" that controls this process is located in the hypothalamus, a small structure located deep within the brain. The nervous system constantly relays information about the body's temperature to the thermostat, which in turn activates different physical responses designed to cool or warm the body, depending on the circumstances. These responses include: decreasing or increasing the flow of blood from the body's core, where it is warmed, to the surface, where it is cooled; slowing down or speeding up the rate at which the body turns food into energy (metabolic rate); inducing shivering, which generates heat through muscle contraction; and inducing sweating, which cools the body through evaporation. Fever is an important component of the immune response, though its role is not completely understood. Physicians believe that an elevated body temperature has several effects. The immune system chemicals that react with the fever-inducing agent and trigger the resetting of the thermostat also increase the production of cells that fight off the invading bacteria or viruses. Higher temperatures also inhibit the growth of some bacteria, while at the same time speeding up the chemical reactions that help the body's cells repair themselves. In addition, the increased heart rate that may accompany the changes in blood circulation also speeds the arrival of white blood cells to the sites of infection.

Morven S Edwards,MD (2010) stated that the normal variation in bodytemperature, there is no single value that is defined as fever. However, the following are generally

accepted values: Rectal temperature above 100.4ºF (38ºC)Oral temperature above 100ºF (37.8ºC) Auxiliary (armpit) temperature above 99ºF (37.2ºC)Ear (tympanic membrane) temperature above 100.4ºF (38ºC) in rectal mode or 99.5ºF (37.5ºC) in oral mode Forehead (temporal artery) temperature above 100.4ºF (38ºC) Auxiliary, ear, and forehead temperature measurements are easier to obtain than rectal or oral temperatures.

Parul Dutta (2009) stated that the fever or pyrexia is the elevation ofbody temperature above normal ie. 37^0C or 98.4^0F. It is very common health problem is adults. It is a symptom related to various disease conditions. There are variations in increased body temperature. Pyrexia is classified as the following low pyrexia 31.1^0C to 38.4^0C (99^0F ± 101^0F), moderate pyrexia 38.4^0C to 39.5^0C (101^0F ± 103^0F) high pyrexia 39.5to 40.6 C (103^0F ± 105^0F, hyper pyrexia above 40.6^0C (105^0F). The causes of fever in adults were dehydration, excessive dieresis, hot environment and evening time of the day, excitement and exaction, injury or disturbance of hypothalamus or brain, side effects of drugs, toxins, vaccines, chemical substances, and disease conditions like leukemia, systemic lumps erythematosus, and tuberculosis rheumatic fever. The clinical manifestations associated with fever were hot dry skin, dehydration, flashed face thirsty nausea, vomiting and loss of appetite, headache, body ache, malaria, high colored scanty urine, increased pulse rate and respiration rate, chill, rigor, delirium, fainting attaché or convulsions. The investigations for fever were urine for routine examinations and blood examination.

The management of adults with fever is initially symptomatic, but the exact cause to be detected and management to be started in the earliest possible time. Antibiotic trial is not rational and may be harmful to the adults. Reduction of body temperature is the vital aspect, of the management, it can be done by giving tepid sponge, applying ice bag or farming is cool airy environment with good ventilation and warm water foot bath therapy. Provision of rest and comfort to reduce metabolic rate and allowing more oral thirds to prevent dehydration are important supportive measures. Light liquid and easily digestible high caloric diet to be planned according to adults condition.

LITERATURE RELATED TO WARM WATER FOOT BATHTHERAPY

Sauna Beevi 2016 stated that the one home head out water immersions(WI) in various temperatures (32^oC, 20^oC, and 14^oC) produced various effects. Immersion at 32^oC did not change metabolic rate (MR) and rectal temperature but it lowered the heart rate (HR) by 15% systolic blood pressure (SBP) and diastolic blood pressure (DBP) by 11% and 12% respectively compared, with controls at temperature. Based on available literature, this review suggests that hydrotherapy was widely used to improve immunity and for the management of pain, CHF, MI, chronic obstructed pulmonary diseases, asthma, anorectic disorders, fatigue, anxiety obesity, hyperthermia etc. It produces different effects on various systems of the body depending on the temperature of water and though these effects are scientifically evidence based, there in care of evidence for the mechanism on how hydro therapy improves these diseases.

Yammamoto 2015 stated that the hot water has been used for centuriesas a healing and detoxifying medium. Hot water foot baths are a cheap simple way to relieve stress, insomnia, and fever, tired muscle by stimulating acupuncture points located on the bottom of each foot the warm water has been used.

Kazuo 2014 Stated that foot bath have originated from Japanese legendoccurred about 1600 years ago. It was narrated by group of sickly people followed same route of pilgrimage and some doctors and renowned physicians found that foot bath has something to do with healing. The hot water footbath is used for reliving fatigue, stress, insomnia, anxiety and also maintains normal body temperature. It also provides comfort for the people. It can give a great relief without drugs among adults.

A Mooventhan and L Nivethitha (2013) stated that the use of water forvarious treatments (hydrotherapy) is probable as old as mankind. Hydrotherapy is one of the basic methods of treatment widely used in the system of natural medicine, which is also called as water therapy, aquatic therapy, and pool therapy. The use of water in various forms and in various temperatures can produce different effects on different system of the body. Based on the available literature this review suggests that the hydrotherapy has a scientific evidence based effect on various systems of the body.

Behl R.K, Kashyapm Malaysarkar.S (2012) conducted a study on physiological effects of mild foot bath at Graduate College of Health and Welfare, Japan among 31

students by non probability convenient sampling technique. The study revealed that subcutaneous blood flow increased in the lower limp during the foot bath. The study concluded that two-thirds of subject experienced a true rest well as mental relaxation during the foot bath therapy.

Boel.M, Gracchi.H, Vander Ent, (2010), conducted a longitudinal study to assess the effectiveness of warm water foot bath therapy on relieving fatigue and insomnia problems among 50 clients undergoing chemotherapy by adopting purposive sampling technique. the study concluded that warm water foot bath therapy was more effective for relieving fatigue and insomnia problems among client with chemotherapy.

LITERATURE RELATED TO STUDIES ON WARM WATERFOOT BATH THERAPY IN REDUCTION OF FEVER

Department of pediatrics American University of Beirut (2006)

Sindhu Joseph [2017] A quasi- experimental research [pre-test, posttest the control group] design was used for the present study. The conceptual frame work was formed based on Gail. W. Stuart Evidenced- based model. The samples consist of 60 adults with the inclusion criteria selected by purposive sampling technique. Warm water foot bath therapy [WWFBT] was administered to the experimental group for 15 minutes along with standard treatment [paracetamol]. Standard treatment was only given for the control group. Reassessment of temperature was done for both groups after 15th, 30th, 45th minutes from the time of commencement of intervention.

The mean temperature of both experimental and the control group were compared to examine the effectiveness of warm water foot bath therapy. The data was analyzed by using descriptive and inferential statics such as paired, unpaired. t-Test. The rate of mean reduction [0.35, 0.78 and 1.29] in body temperature was more in experimental group after the intervention than in the control group [0.18, 0.21, 0.60]. There was significant difference in mean temperature at 15th, 30^{th}, 45 minute between experimental and the control group. In the experimental group the mean pre test temperature was 100.55±1.01 and dropped to mean post test temperature 100.21^0F ±1.08 at 15^{th}, 99.75^0 F ± 1.04 at 30th and 99.22^0F ± 0.72 at 45th minute.

But in the control group obtained mean value of post observation at15th minute was higher than pre observation and the P value at 45th minute (P=0.006) was less than the

0.05. Therefore, there was reduction of body temperature in the control group only at 45th minute. The comparison between the two group shows that, the computed P values (P=0.00, 0.005, 0.003) were less than 0.05, thus it indicates that there was significant difference in temperature reduction between the two groups at different time interval there was no significant association between temperature reduction and selected baseline variables therefore WWFBT can be given to adults diagnosis and duration of illness. Warm water foot bath therapy was effective in reduction of body temperature.

Sumita Datta (2016) conducted a quasi experimental study with nonequivalent control group time series design was conducted on warm water foot bath therapy on 30 adults with fever in the medical unit at Calcutta National Medical College and Hospital, Kolkata, by adopting non probability purposive sampling technique. The objectives of the study were to determine the effectiveness of warm water foot bath therapy in terms of differences in physiological parameters of adults with fever between experimental and control group, Physiological parameters were assessed before giving therapy, 15 and 25 min after therapy. Result showed an average reduction of physiological parameters, (i.e., auxiliary temperature, pulse rate, respiration rate, blood pressure) after giving warm water foot bath therapy in experimental group but in control group physiological parameters are significantly increased., independent t value among the mean physiological parameters between experimental and control group at 2nd observation, (i.e., 6.2., 2.13,2.21,0.39,0.43,$p<0.05$) and at 3rd Observation the computed t values (16.5,7.8,5.84,2.21, 2.15, $p<0.05$) were significant after warm water foot batch therapy. The researcher recommended further studies with large sample, also with other group of adults, wide range of auxiliary temperature, more number of observations, comparative study between warm water foot bath therapy and other types of hydrotherapy, comparative study between warm water foot bath therapy and use of antipyretics, effect of warm water foot bath therapy on other physiological parameter like oxygen saturation etc.

Macharen J.E (2014) conducted a study to evaluate the effect of warm water foot bath therapy to reduce the fever among 60 children by adopting the purposive sampling technique.The study revealed that there was significant difference in reduction of temperature after application of warm water foot bath therapy in experimental and control group.

Selva Kumari.R (2011) conducted a quasi experimental study by using one group pre and post test design on effect of hot water foot bath therapy among 60 client with fever.The study revealed that there was a significant reduction in temperature after application of hot water foot bath therapy.

Maria Gradin (2012) conducted a study in effectiveness of warm water foot bath therapy and antipyretic drugs verses only antipyretic drug in the management of fever among 150 adults by adopting the randomized control trial. The result revealed that the reduction of body temperature,warm water foot bath therapy was significantly faster than only antipyretic drugs.

CONCEPTUAL FRAMEWORK

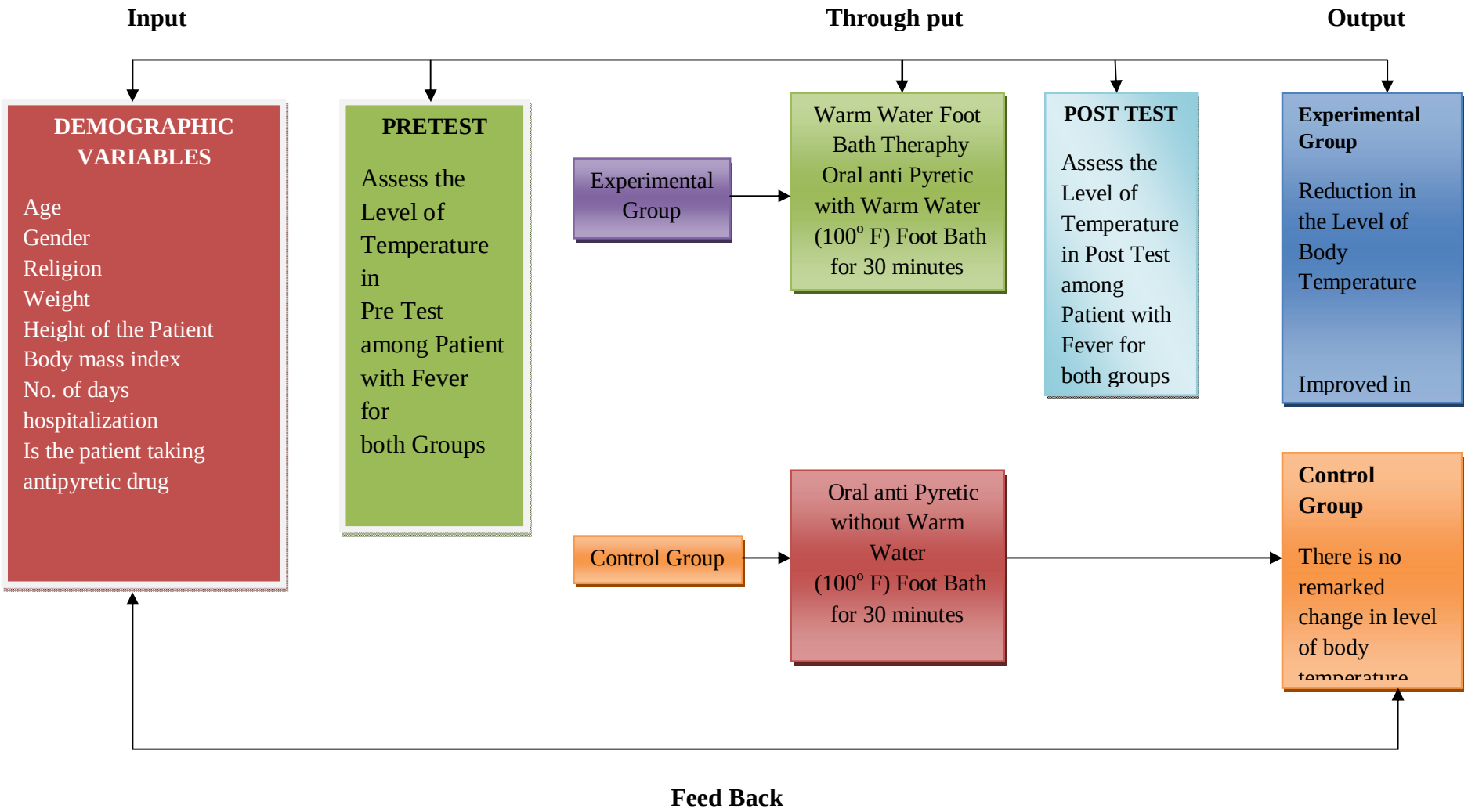
The study based on **J.M Kenny's** open system model. All living system are open.In that there is a continues exchange of matter,energy and information. Open system have varying degree of interaction with the environment from which the system receives input output and gives back out put in the form of matter energy and information.

The main concepts of the open systems model are input and feedback. In open system theory,input refers to matter,energy and information that enters into the system through its boundary. Through put refers to matter of energy and information.

Output refers to the matter of energy and information. After processing input system returns output(matter,energy,information) to the environment in an altered state, feedback refers to environment responses to the system, output is used by the system in adjustment correction and accommodation to the environment

The study was undertaken to determine the effectiveness of warm water footbath therapy among the study groups. A pretest was conducted to identify the level of body temperature among the study subject. A warm water footbath therapy was administered along with oral antipyretics for the experimental groups as an input process for 30 minutes, whereas the hospital routine was given for the control group. The throughput process involves the transformation of warm water footbath therapy to ensure the reduction of the body temperature among adult. The post test value will debit transformation of effectiveness of warm water footbath therapy as an output process,which would show possible decrease in the level of body temperature among adult with fever.

CONCEPTUAL FRAME WORK OF MODIFIED J.M.KENNY'S OPEN SYSTEM MODEL



CHAPTER – III

METHODOLOGY

RESEARCH METHODOLOGY

Research methodology is the systematic way of doing a research to solve a problem. It comprises the statement of the problem,objectives of the study, hypothesis that have been formulated,methods used for data collection and the statistical methods used for analyzing the data and the logic behind it.

-Kotharicr ,2016

Methodology is one, which enables the researcher to project the blue print of the research undertaken.

In this chapter the investigators puts across the description research approach, research design, setting, populations, sample, technique, criteria for sample selection, development and description of the tool,validity,reliability,pilot study,data collection procedures.

RESEARCH APPROACH:

It is an applied form of research that involves finding out how well a program, practice, procedure or policies working.

-Polit, 2004

The choice of research approach constitutes one of the major decisions, which must be made in conducting research study.

The research approach adopted for the study was quantitative(evaluative) approach.

RESEARCH DESIGN:

Polit (2004) stated that, researchers overall plan for obtaining answers to the research questions or testing the research hypothesis refered to the research design.

The research design adopted for the study was quasi experimental pre and post test with control group design.

Quasi Experimental pre and post test with control group design.

GROUP	PRE TEST	INTERVENTION	POST TEST
EXPERIMENTAL	O_1	X	O_2
CONTROL	O_1	-	O_2

O_1 - Pre test level of body temperature in experimental and control group.

X- Administration of warm water footbath therapy for experimental group.

O_2 -Post test level of temperature in experimental and control group.

VARIABLES:

Treece and Treece (1988), states that a variable is anything that can change or anything that is liable to vary.

Independent variable:

Treece and Treece (1988), states that an independent variable is the variable that stands alone and is not dependent on any other. It is the cause of the action.

In this study refers to Warm water footbath therapy on adults in experimental group.

Dependent variable:

Treece and Treece (1988), states that the dependent variable is the effect of the action of the independent variable and can not exist by itself.

In this study dependent variables refers to Adult with fever.

Demographic variables:

Age, Gender, Religion, Weight, Height, BMI, Number of hospitalization, Intake of patient with antipyretic drugs.

POPULATION:

Polit and Hungler (2004), states that population is the entire aggregation of cases that a designed set criteria.

The population for this study are all the adults with fever admitted in Raghav Hospital, Appakudal at Erode Dt.

SAMPLE:

Polit and Hungler (2004), states that a sample consist of a subset of the units that compose the population.

The sample for this study consist of adults with fever in Raghav Hospital, Appakudal,Erode(DT).

SAMPLE SIZE:

The sample sizes for the study consist of 40 adults.20 experimental group and 20 in control group.

SAMPLING TECHNIQUE:

Talbot (2000), states that sampling is the process of selecting a portion of population to obtain data regarding a problem.

In this study non probability purposive sampling technique was adopted to select the sample.

SITE AND SETTING

Site: Raghav Hospital, Appakudal,Erode(DT).

Setting: Medical ward and Surgical ward.

CRITERIA FOR SAMPLE SELECTION:

1. Inclusion criteria:

- The adult who were above 100^0 F of fever.
- Adult who are taking antipyretic drugs.

2. Exclusion Criteria:

- Peripheral vascular disorder.
- Dengue fever
- typhoid fever
- Unconsciousness.
- Those who can't assume sitting position.
- multiple organ dysfunction syndrome
- Ulcer, lesion (or) allergy in the legs.

DESCRIPTION OF THE TOOL

The instrument was developed by the investigator with the due guidance of experts. The tool consist of two sections.

SECTION-1:Demographic variable of adult with fever.

SECTION-2:Clinical thermometer, Scoring procedure.

SECTION-1

Dealt with demographic variables of adult with fever such as age gender, religion, weight, height ,BMI, number of days in hospitalization, Intake of patient with antipyretic drug.

SECTION-2

It consist of clinical thermometer which is used to check the level of body temperature.

SCORING PROCEDURE:

Normal	$97\text{-}99^0$ F ($36\text{-}37^0$ C)
Low grade fever	$99\text{-}100.4^0$ F($37.2\text{-}38^0$ C)
Pyrexia	Above $100.4\text{-}105^0$ F($38\text{-}41^0$ C)

VALIDITY OF THE TOOL:

According to Nancy Burns [2005] “Validity is the determination of the extent to which an instrument reflect the abstract construct being examined”

The content validity of the tools were evaluated by 4 nursing experts and 2 medical experts in the field of medical surgical nursing..The tool was found in valid.

RELIABILITY OF THE TOOL:

According to Pilot and Hunger [2004] “reliability of an instrument is the consistency with which it measures the target attribute”.

In this study, clinical thermometer was used to assess the level of body temperature.

PILOT STUDY

After obtaining formal administrative approval, the pilot study was carried out for over a period of one day morning and evening] with 4 samples (2 in Experimental and 2 in Control) who met the inclusion criteria.The pilot study was designed to find out the study. There was no modification done and the study samples were excluded from the main sample for the data collection.The pilot study results showed that it was feasible to conduct the study(r-1.037)

DATA COLLECTION PROCEDURE:

The period of data collection was conducted for the six weeks. The formal return permission was obtained from the medical officer of Raghav Hospital, Appakudal, and Erode (DT). To carry out the main study by the investigator, the data was collected on all seven days of the week. The nature and purpose of the study was explained to the adults and their relatives. Oral concent was obtained from the patients and relatives. The samples were selected with non probability purposive sampling technique by experimental research design.

The selected samples was allocated in two groups (group 1 experimental, group 2 control) the level of body temperature on pre test was checked for both groups by

clinical thermometer. The experimental group received warm foot bath therapy for 30 minutes as in 2 times per day. The temperature of the water was 100^0 F.

The immersion of foot angle in the warm water was used as per the basis. The temperature of the water was measured by lotion thermometer and routine management was given for control group. The level of body temperature on post test was measured for both groups by clinical thermometer on by observational schedule

PLAN FOR STATISTICAL ANALYSIS

Data analysis is the systematic organization and synthesis of research data and testing of research hypothesis using those data.

The data obtained was planned to be analyzed on the basis of objectives of the study using descriptive and inferential statistics.

- Organize data in master coding sheet.
- Demographic is to be analyzed in terms of frequency and percentage.
- Body temperature was to be presented in forms of mean, percentage and standard deviation.
- Chi- square test was used to determine the association between level of body temperature among demographic variables.

S.N	DATA ANALYSIS	METHODS	REMARKS
1	Descriptive	Mean, Standard deviation, percentage.	Assess the level of body temperature among adults with fever.
2	Inferential statistics	Paired **'t'** test	Comparison of pre and post test level of body temperature among adults with fever.

		Unpaired **'t'** test	Comparison of post test level body temperature between experimental and control group.
		Chi square test	Analysis the association between their selected demographic variable.

PLAN FOR DATA ANALYSIS:

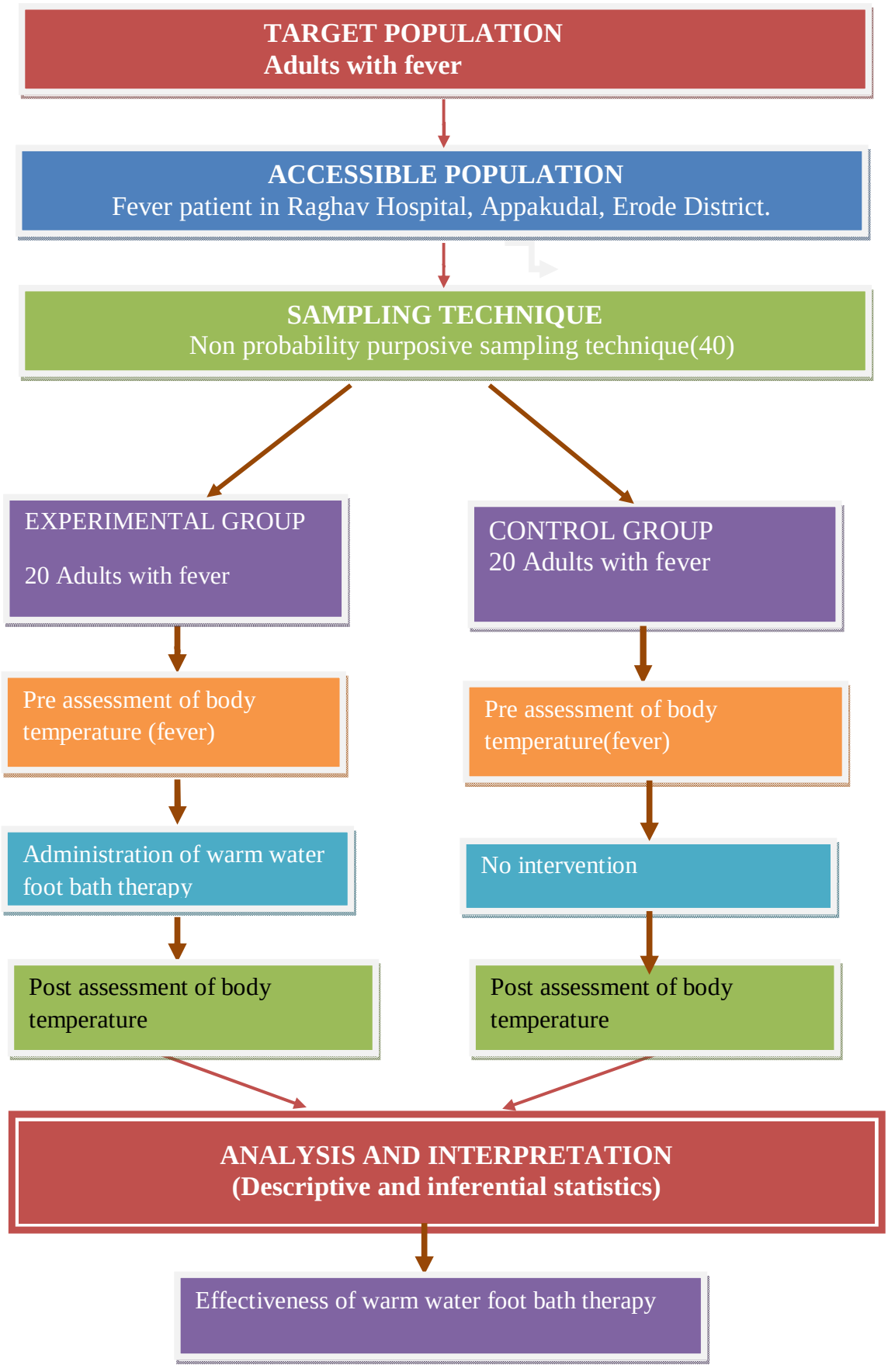
The collection of data would be arranged and tabulated to represent the findings of the study. Both descriptive and inferential statistical would be used. Descriptive statistical members, percentage, mean and standard deviation were used to analyze the demographic data and clinical variable. For the description of demographic data simple percentage would be used.

Independent 't' test would be used to compare the post test level of body temperature between the experimental group and control group .Chi square test would be used to find out the association between demographic variables and level of body temperature on post test among experimental group.

ETHICAL CONSIDERATION:

The researcher obtained prior permission from dissertation committee to conduct pilot study at be well Hospital, Erode (DT). The Wrriten consent was obtained from each participants of study before starting data collection. Assurance was given to all adults & relatives to maintain confidentiality.

SCHEMATIC REPRESNTATION OF RESEARCH METHODOLOGY



CHAPTER- IV
DATA ANALYSIS AND INTERPRETATION

The chapter deals with the analysis and interpretation of data collection from 40 adults with hyperthermia to assess the effectiveness of warm water foot bath therapy on level of temperature amount adults with fever.

Polit and Beck (2003) has noted data analysis as "the systematic organization, synthesized research data and testing of research hypothesis using those data"

Denise F. Polit (2011) defined data as, "The piece of information obtained in a study".

STATISTICAL ANALYSIS

The data obtained was classified and the following analysis was performed in fulfilling the objectives of the study. The analysis involves the translation of the information collected during the course of research project into interpretable, convenient and descriptive terms and to draw inferences from them using statistical methods. The purpose of analysis was to summarise, compare and test the proposed relationship and inferential findings.

DESCRIPTION OF DATA ANALYSIS

The analysis and interpretation of data of the study are based on data collected, Through clinical thermometer to assess the level of temperature among 40adults with fever. The study findings are presented in sections as follows:

- **Section I** : Data on demographic variables of adults with fever.
- **Section II** : Data on level of temperature among adults with fever
- **Section III** : Data on effectiveness of warm water foot bath therapy on level

of temperature among adults with fever.

- **Section IV** : Data on association between levels of temperature among

adults with fever and their selected demographic variables in experimental and control group.

RESEARCH HYPOTHESIS

H_1 : There will be a significant difference in the temperature between experimental and control group after warm water footbath therapy.

H_2 : There will be a significant association of changes in temperature of adult with selected demographic variables.

SECTION 1

DATA ON DEMOGRAPHIC VARIABLES OF ADULTS WITH FEVER

TABLE – 1 FREQUENCY AND PERCENTAGE DISTRIBUTION OF ADULTS WITH FEVER IN THE EXPERIMENTAL AND CONTROL GROUP

S. No	Demographic variables	Experimental group (n=20)		Control group (n=20)	
		Frequency	Percentage	Frequency	Percentage
1.	**Age in years**				
	a) 20 to 30 years	10	50%	10	50%
	b) 30 to 40 Years	8	40%	4	20%
	c) 40 to 50 years	2	10%	6	30%
2.	**Gender**				
	a) Male	9	45%	8	40%
	b) Female	11	55%	12	60%
	c) Others	0	0%	0	0%
3.	**Religion**				
	a) Hindu	9	45%	12	60%
	b) Christian	4	20%	3	15%
	c) Muslim	7	35%	5	25%
	d) Others	0	0%	0	0%
4.	**Weight?**				
	a) Below 50Kg	2	10%	0	0%
	b) 50 to 60 Kg	8	40%	9	45%
	c) 61 to 70 Kg	9	45%	11	55%
	d) 70 and above	1	5%	0	0%

5.	**Height**				
	a) Below 120 cm	2	10%	0	0%
	b) 120 to 140 cm	8	40%	9	45%
	c) 141 to 170 cm	9	45%	11	55%
	d) 170 and above	1	5%	0	0%
6.	**BMI Category**				
	a) Below 18.5	2	10%	0	0%
	b) 18.5 to 24.9	16	80%	11	55%
	c) 25 to 30	1	5%	9	45%
	d) Above 30	1	5%	0	0%
S. No	**Demographic variables**	**Experimental group (n=20)**		**Control group (n=20)**	
		Frequency	**Percentage**	**Frequency**	**Percentage**
7.	**No. of hospitalization**				
	a) Below 3days	16	80%	17	85%
	b) 5 Days	4	20%	3	15%
	c) 1 Week	0	0%	0	0%
	d) More than one week	0	0%	0	0%
8.	**Is the adults taking any antipyretic drugs**				
	a) Yes	20	100%	20	100%
	b) No	0	0%	0	0%

Table 1 shows that in the experimental group, majority 10 (50%) were in the age group of 20 to 30 years, 11 (55%) were female, 9(45%) were Hindus, 9(45%) weighed 61 to 70 kg, 9(45%) were in the height range of 140 to 160 cm, 16 (80%) were in the category of BMI 18.5 to 24.9, 16(80%) stayed below 3 days in hospital and 20 (100%) were taking antipyretic drugs.

Whereas in the control group, majority 10 (50%) were in the age group of 20 to 30, 12 (60%) were female, 12 (60%) were hindus, 11 (55%) weighed 61 to 70 kg, 11(55%) were in the height range of 140 to 170 cm, 11 (55%) the category of BMI 18.5 to 24.9, 17(85%) stayed below 3 days in the hospital, 20 (100%) of adults had taking antipyretic drugs.

FIGURE: 3

BAR DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO AGE

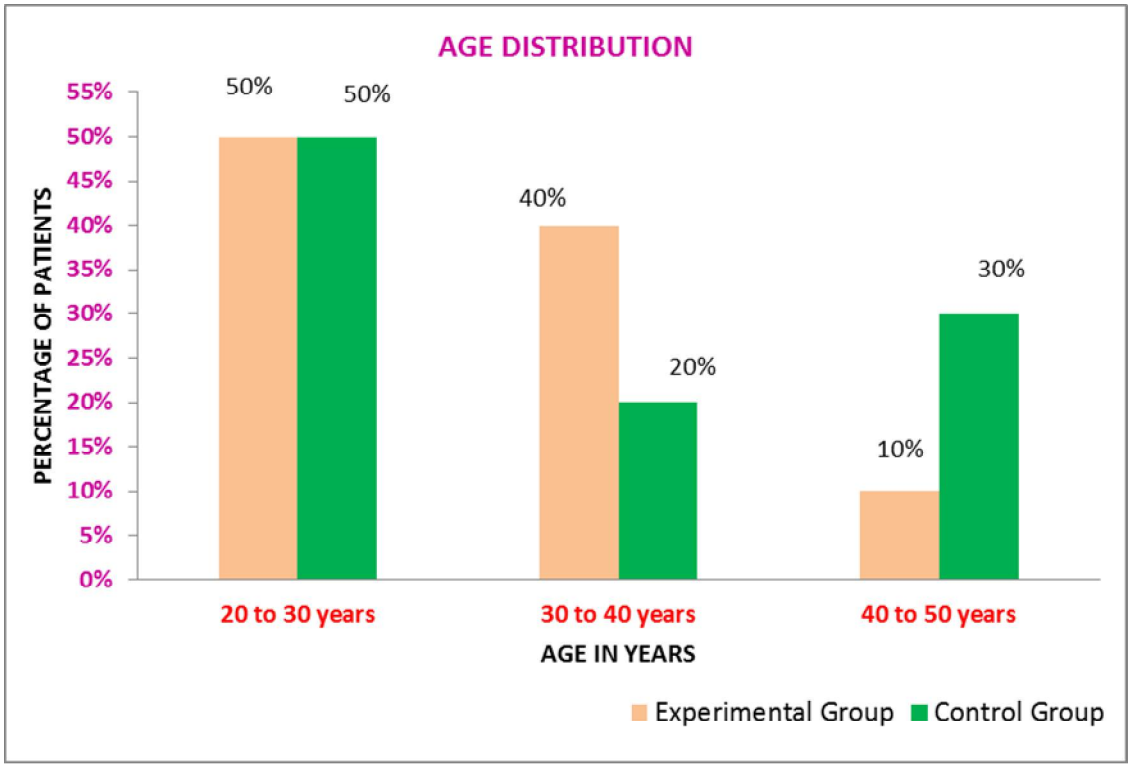


Figure 3: according to age 50% of adults were 20-30 years, 40% adults were 30-40 years, 10% adults were 40-50 years in experimental group. In control group 50% of adults were 20-30 years, 20% adults were 30-40 years, 20% adults were 40-50 years.

FIGURE: 4

CONICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO GENDER

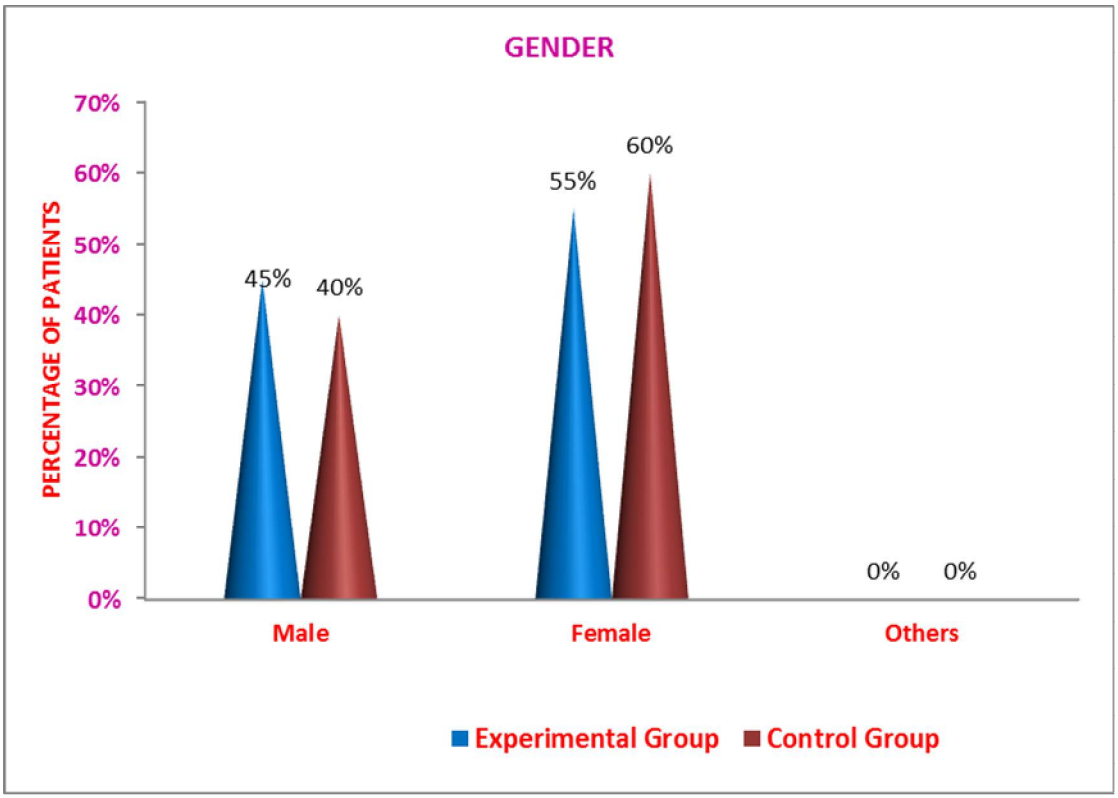


Figure 4: according to gender 45% of adults were male, 55% female in experimental group and 40% adults were male,60% of adults were female in control group.

FIGURE:5

CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO RELIGION

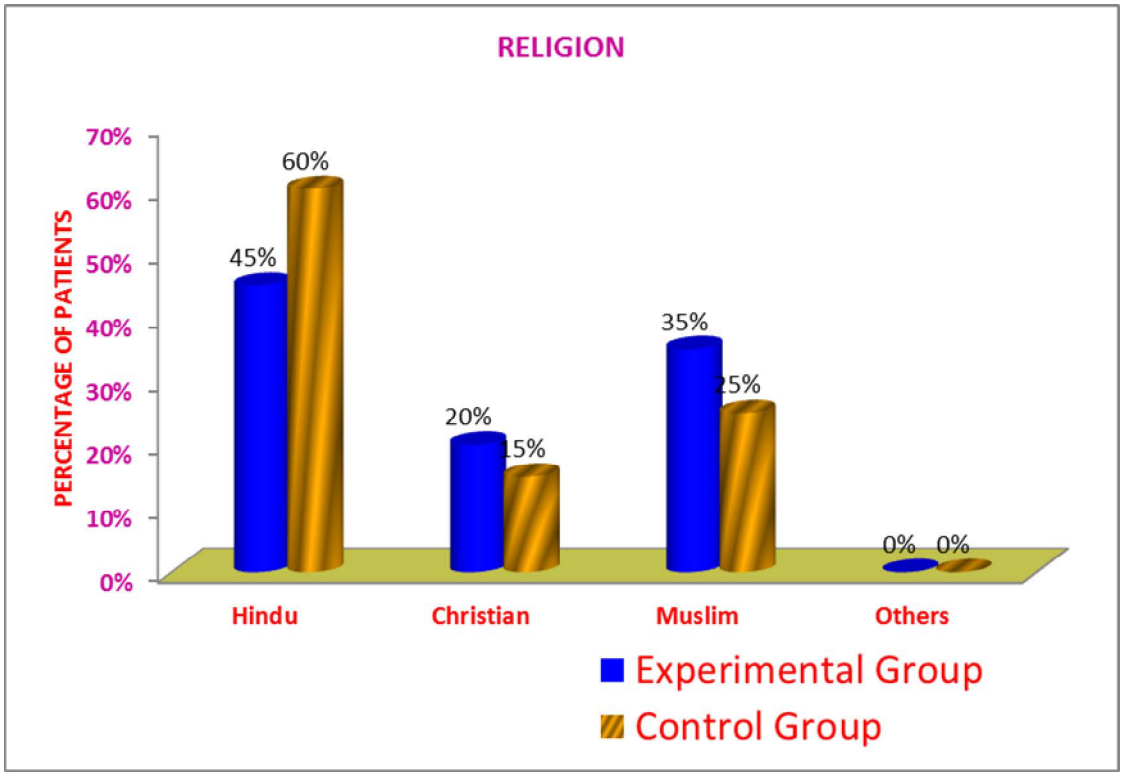


Figure 5:according to religion 45% of adults hindus, 20% Christians, 35% muslims in experimental group. In control group 60% of adults were hindus, 15% were Christians, 25% were muslims.

FIGURE:6

PYRAMIDAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO WEIGHT

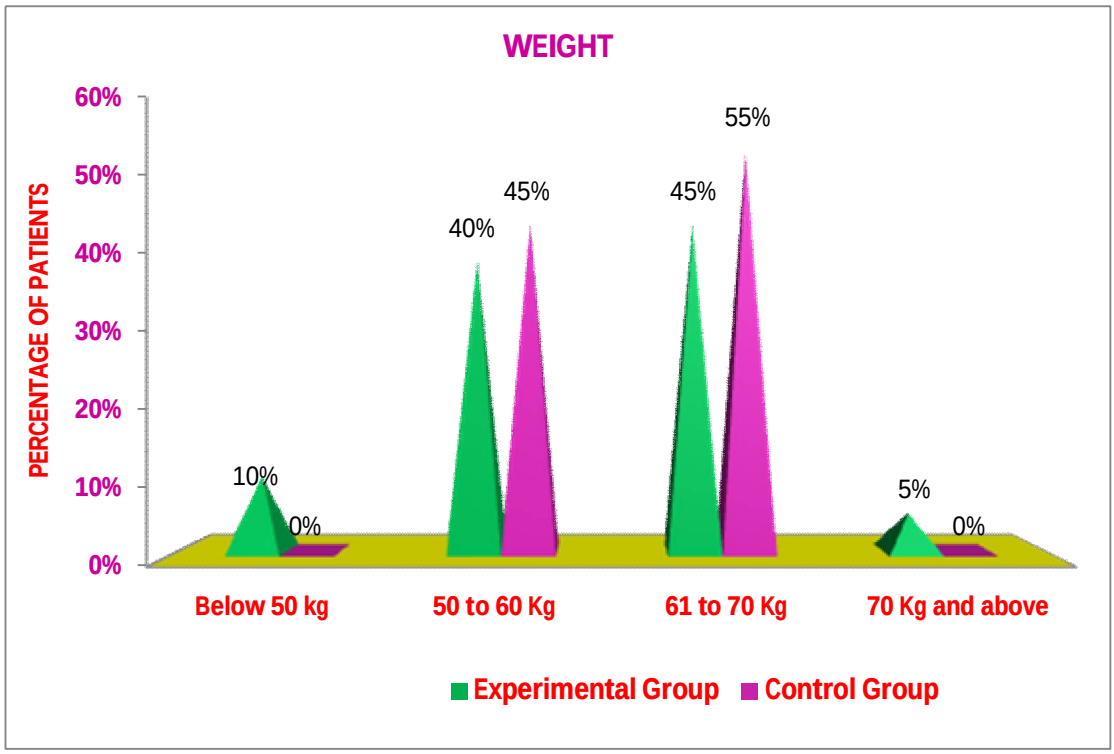


Figure 6: according to weigh 10% of adults were below 50kg, 40% were 50-60kg, 45% were 61-70kg in experimental group and 45% adults were 50-60kg, 55% were 61-70kg in control group.

FIGURE:7

BAR DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO HEIGHT

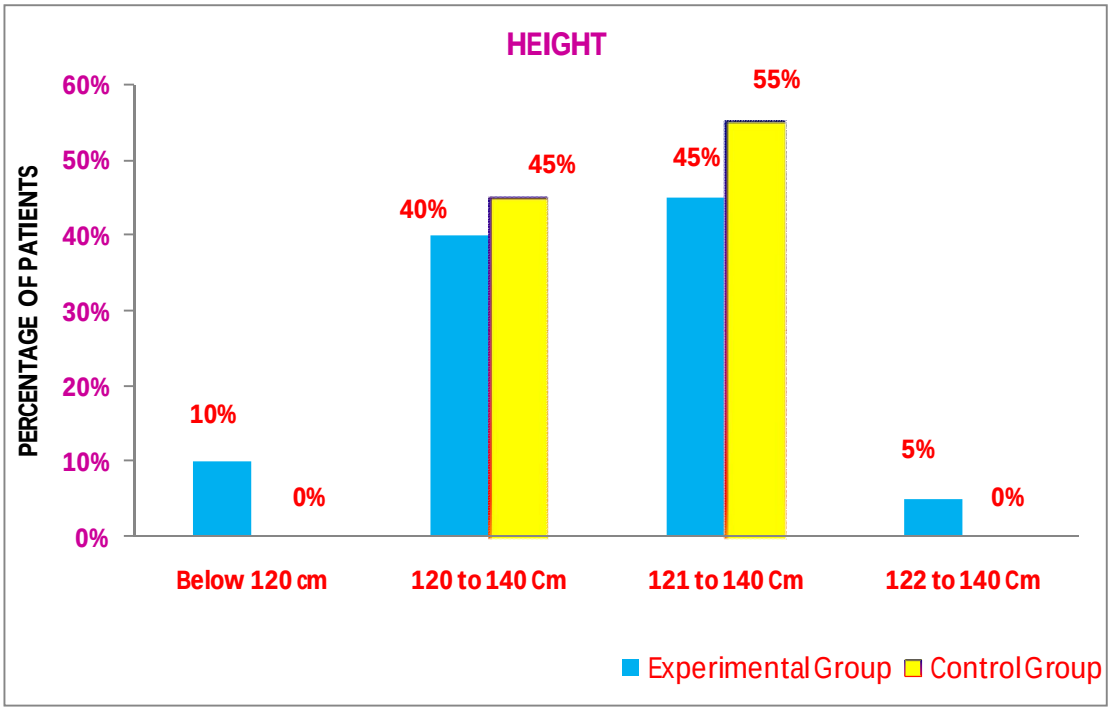


Figure-7 –according to height 10% of adults were below 120cm, 40% were 120-140cm, 45% were 141-170cm, 5% were 170 and above in experimental group.45% of adults were 120-140cm, 55% were 141-170cm in control group.

FIGURE: 8

CONICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO BMI CATEGORY

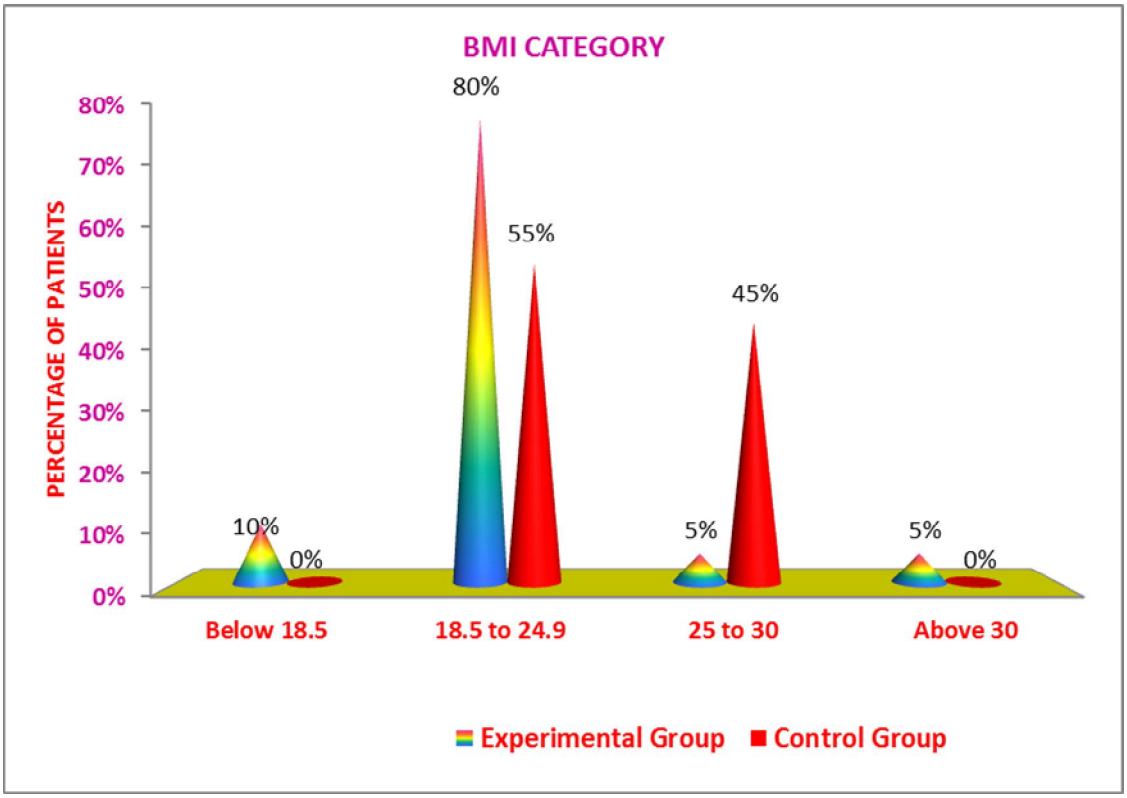


Figure 8:according to 10% of adults were below 18.5,80% were 18.5-24.9,5% were above 30 in experimental group and control group 50% of adults were 18.5-24.9, 45% were 25-30.

FIGURE: 9

CYLINDRICAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE AGE ACCORDING TO NO.OF HOSPITALISATION

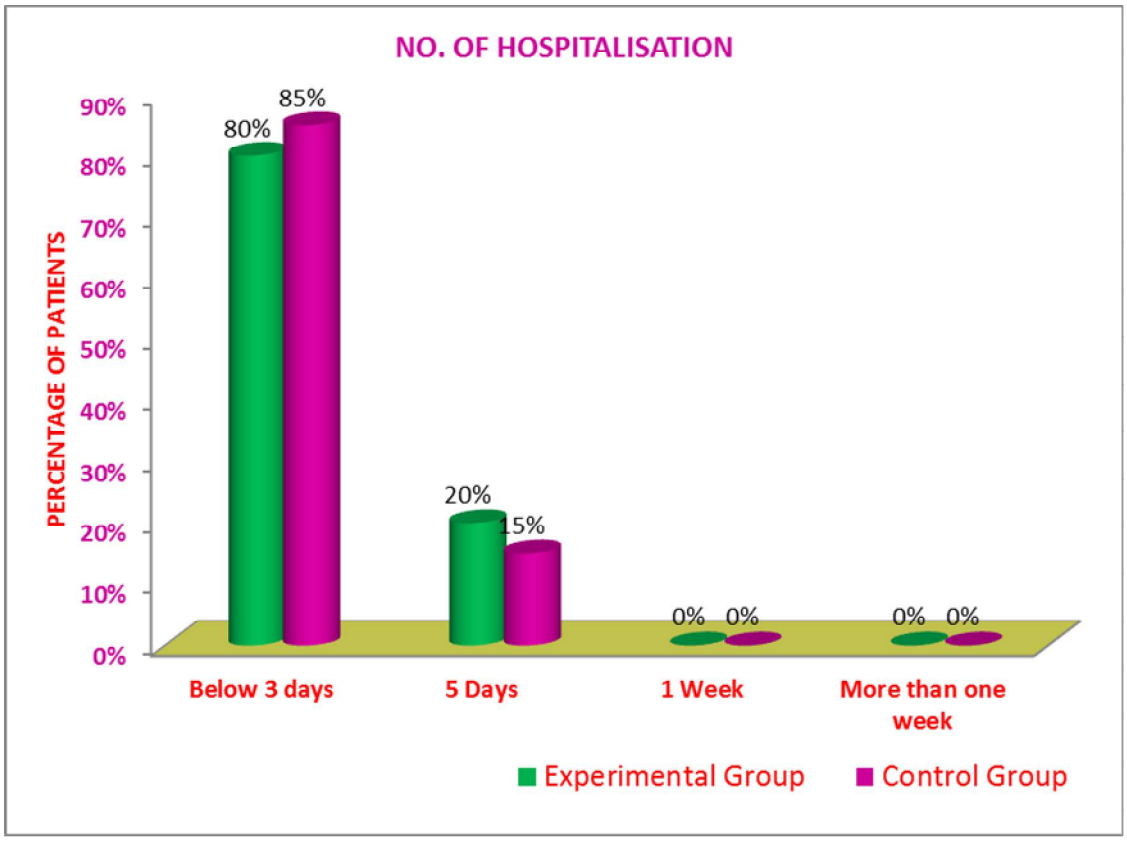


Figure 9:according to number of hospitalization 80% of adults were below 3 days, 20% were 5days in experimental group and 85% of adults were in below 3days, 15% were 5days in control group

FIGURE: 10

PYRAMIDAL DIAGRAM SHOWING THE DISTRIBUTION OF SAMPLE PERCENTAGE ACCORDING TO IS THE ADULTS TAKING ANY ANTIPYRETIC DRUGS

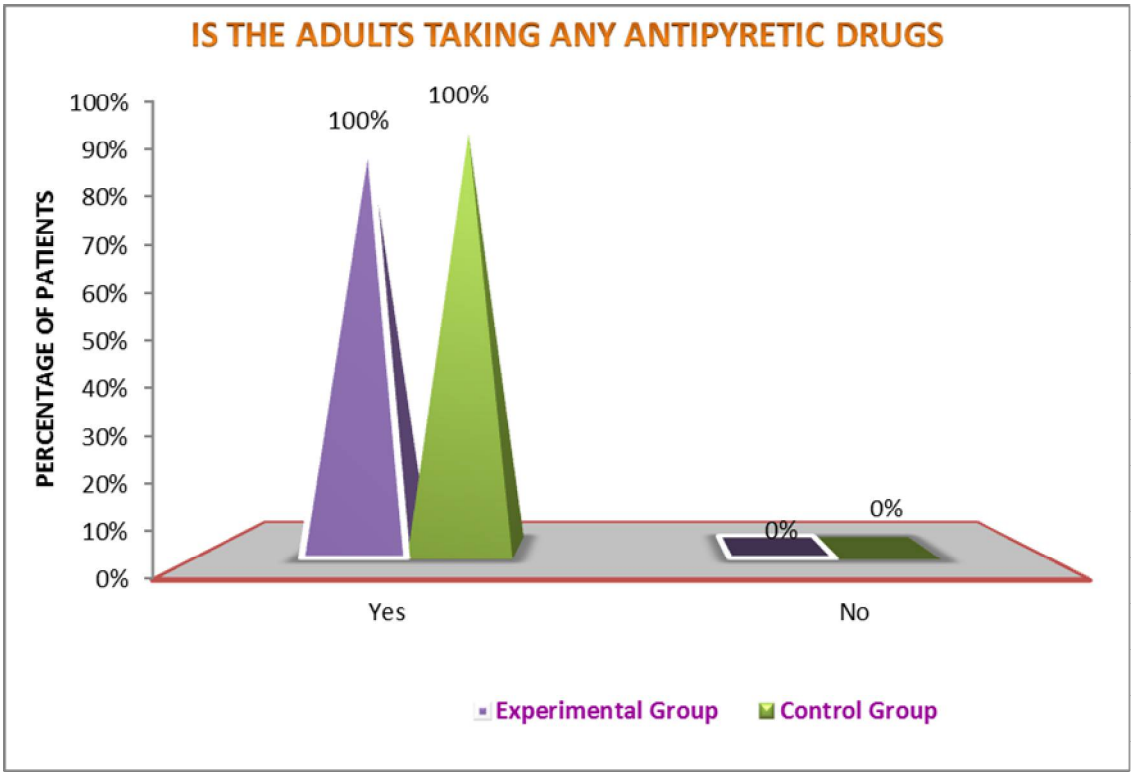


Figure 10: : according to intake of patient with antipyretic drugs 100% adults were in experimental group and 100% of adults in control group.

SECTION-2

Table 2: ASSESSMENT OF PRE AND POST TEST LEVEL OF WARM WATER FOOT BATH THERAPY AMONG ADULTS WITH FEVER IN CONTROL GROUP.

Level of temperature	**Control Group**			
	Pre test		**Post test**	
	F	%	F	%
Normal	0	0%	1	5%
Low grade	12	60%	6	30%
Pyrexia	8	40%	13	65%

Table:2 In pre test 12 (60%) adults were low grade fever, 8(40%) adults were pyrexia, In post test 1(5%) adults were normal, 6(30%) adults were low grade fever,13(65%) adults were pyrexia in control group.

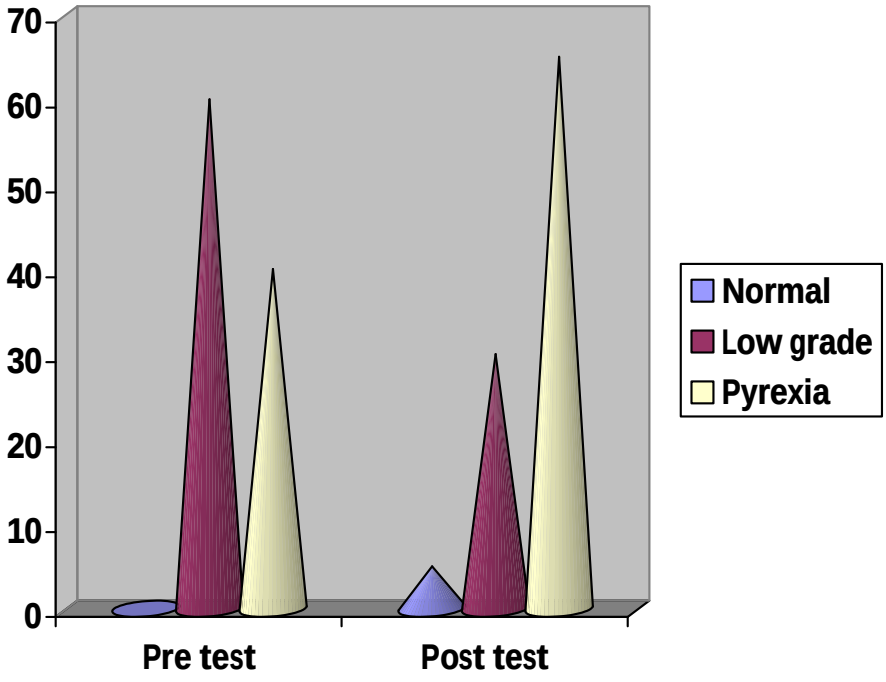


FIGURE-11 Level temperature among adults with fever in control group.

Table 3: ASSESSMENT OF PRE AND POST TEST LEVEL OF WARM WATER FOOT BATH THERAPY AMONG ADULTS WITH FEVER IN EXPERIMENTAL GROUP.

Level of temperature	Experimental Group			
	Pre test		Post test	
	F	%	F	%
Normal	0	0%	12	60%
Low grade	5	25%	6	30%
Pyrexia	15	75%	2	10%

Table:3 In pre test 5(25%) adults were low grade fever, 15(75%) adults were pyrexia, In post test 12(60%) adults were normal, 6(30%) adults were low grade fever,2(10%) adults were pyrexia in experimental group.

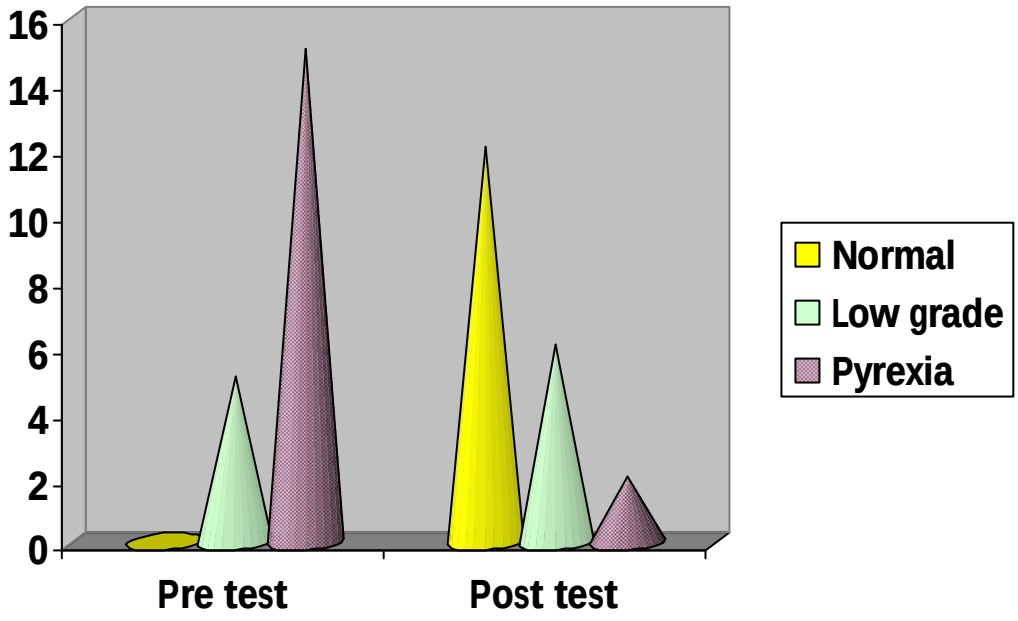


FIGURE-12 Level temperature among adults with fever in control group.

SECTION-3

Table 4: ASSESS THE EFFECTIVENESS OF PRE AND POST TEST LEVEL OF WARM WATER FOOT BATH THERAPY AMONG ADULTS WITH FEVER IN CONTROL GROUP.

	Mean	**SD**	**'t' value**
Pre test (10:00 Am)	100.5	0.110	t=0.894 p>0.05 Non Significant df=19
Post test (10:00 Am)	100.8		
Pre test (4:00 Pm)	100.49	0.482	t=4.437 p<0.05 Significant df=38
Post test (4:00 Pm)	101.04		

*** P<0.05-significant, p>0.05-non significant**

Table 4: shows that in the control group (10:00 Am) pre and post test mean score of body temperature was 100.5, 100.8 with standards deviation was 0.110, t value was 0.894 non significant by p>0.05, control group (4:00 Pm) pre and post test mean score of body temperature was 100.49 and 101.04 with standard deviation was 0.482, t value was 4.437, p<0.05.

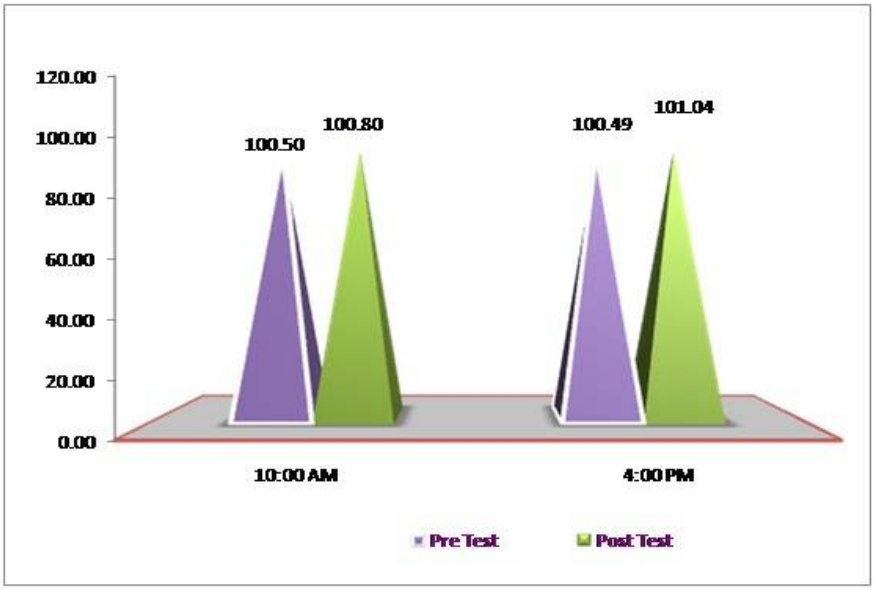


Figure 13: Shows to assess the pre and post test level of body temperature in control group.

Table 5: ASSESS THE EFFECTIVENESS OF PRE AND POST TEST LEVEL OF WARM WATER FOOT BATH THERAPY AMONG ADULTS WITH FEVER IN EXPERIMENTAL GROUP

	Mean	SD	't' value
Pre test (10:00 Am)	101.29	0.752	't'=12.77 p,0.05 Significant df=19
Post test (10:00 Am)	99.44		
Pre test (4:00 Pm)	99.92	0.5813	't'=7.45 p<0.05 Significant df=19
Post test (4:00 Pm)	98.87		

***p<0.05-significant.**

The table 3 shows that in the experimental group (10:00 Am) pre and post test mean score of body temperature was 101.29, 99.44 with standards deviation was 0.752,'t' value was 12.77 significant by p<0.05, experimental group (4:00 Pm) pre and post test mean score of body temperature was 99.92 and 98.87 with standard deviation was 0.5813, 't' value was 7.45, p<0.05 significant.

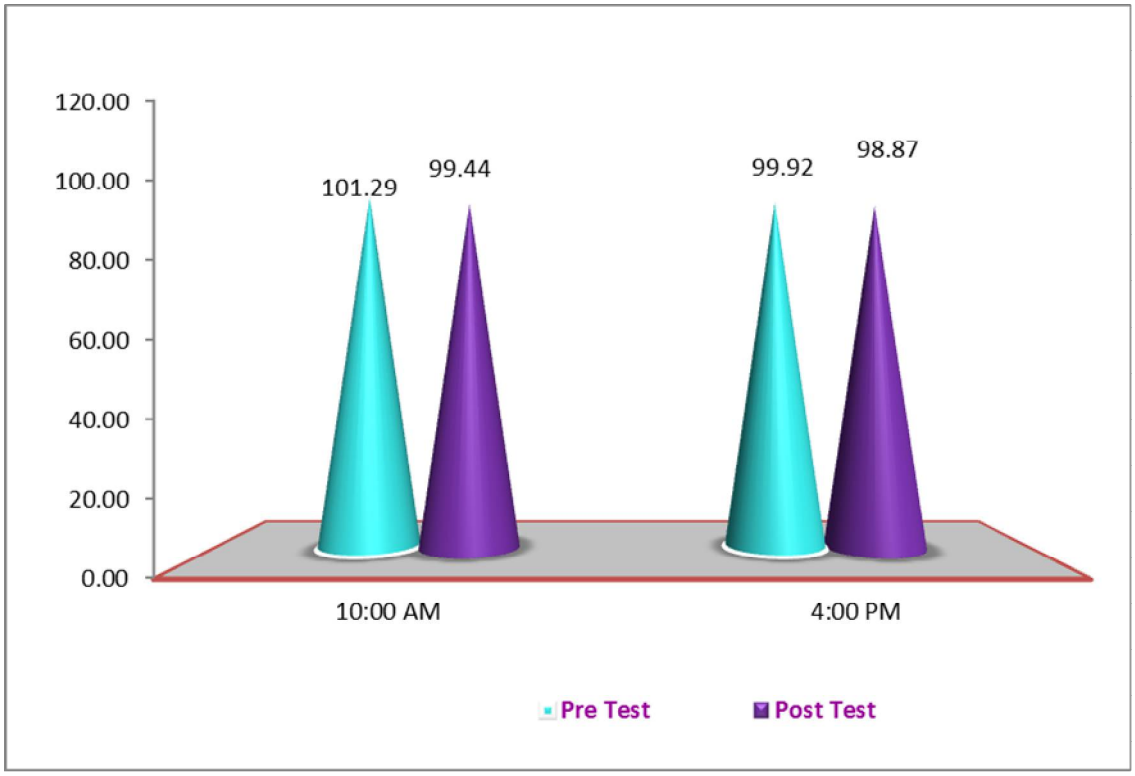


Figure 13: Shows to assess the pre and post test level of body temperature among adults with fever in experimental group.

Table 6: Overall Mean, Standard Deviation, Paired 't' Value and Unpaired 't' Value in post test level of experimental and control group

Level of temperature	Mean	SD	Average Standard deviation	Mean Difference	Paired 't' value	Un paired 't' value
Experimental Group (10:00 Am)	99.40	S_1=0.946	SD=0.947	1.42	t=0.894 df=19 p>0.05 Non significant	6.680 P<0.05 Significant
Control Group (10:00 Am)	100.82	S_2=1.099				
Experimental Group (4:00 Pm)	99.00	S_1=0.958	SD=1.02	2.04	t=7.45 df=19 p<0.05 significant	6.211 P<0.05 Significant
Control Group (4:00 Pm)	101.04	S_2=0.938				

*** p<0.05-significant.**

Table 6: reveals that among experimental and control group (10:00 Am) post test score was 0.946 and 1.094 with standard deviation 0.947. Among experimental and control group (4:00 Pm) the post test mean was 99 and 101.04 with standard deviation 1.02. The calculated mean difference were 1.42 and 2.04 and the obtained 't' value 6.6800 (10:00 AM),'t'=6.2111 (4:00 PM) were significant at P<0.05 level.

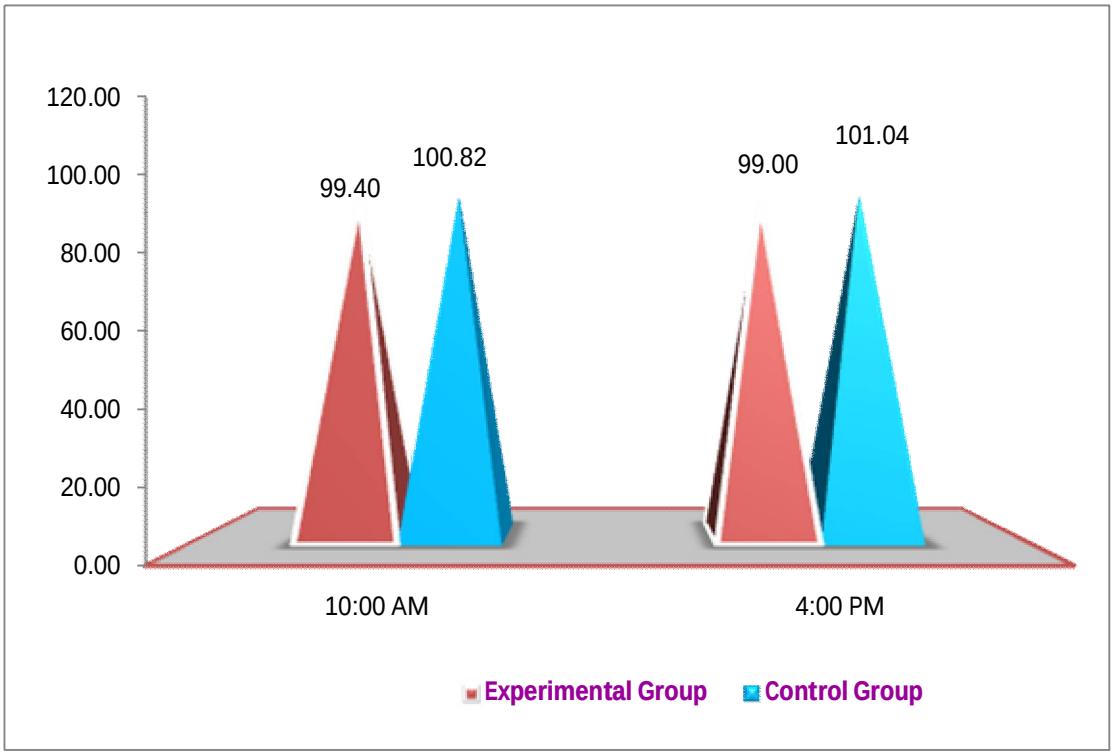


Figure-14 Mean value on post test level of temperature among adults with fever.

TABLE : 7 ASSOCIATION OF PRE TEST LEVELOF BODY TEMPERATURE AMONG ADULTS WITH FEVER IN SELECTED DEMOGRAPHIC IN THE EXPERIMENTAL AND CONTROL GROUP

S. No	Demographic variables	Experimental group (n=20)			Control group (n=20)		
		F	%	χ^2	F	%	χ^2
1.	**Age in years**						
	a) 20 to 30 years	10	50%	χ^2=1.6	10	50%	χ^2=7.6
	b) 30 to 40 Years	8	40%	df=4	4	20%	df=4
	c) 40 to 50 years	2	10%	N.S	6	30%	N.S
2.	**Gender**						
	a) Male	9	45%	χ^2=0.6	8	40%	χ^2=22.34
	d) Female	11	55%	3	12	60%	df=4
	e) Others	0	0%	df=4 N.S	0	0%	N.S
3.	**Religion**						
	a) Hindu	9	45%	χ^2=0.8	12	60%	χ^2=5.07
	e) Christian	4	20%	df=6	3	15%	df= 6
	f) Muslim	7	35%	N.S	5	25%	N.S
	g) Others	0	0%		0	0%	
4.	**Weight?**						
	a) Below 50Kg	2	10%	χ^2= 0.8	0	0%	χ^2=0.60
	e) 50 to 60 Kg	8	40%	df= 6	9	45%	df= 6
	f) 61 to 70 Kg	9	45%	N.S	11	55%	N.S
	g) 70 and above	1	5%		0	0%	
5.	**Height**						
	a) Below 120 cm	2	10%	χ^2=1.2	0	0%	χ^2=0.315
	e) 120 to 140 cm	8	40%	df= 6	9	45%	df= 6

	f)	141 to 170 cm	9	45%	N.S	11	55%	N.S
	g)	170 and above	1	5%		0	0%	
6.	**BMI Category**							
	a)	Below 18.5	2	10%	χ^2= 2.1	0	0%	χ^2= 0.64
	e)	18.5 to 24.9	16	80%	df= 6	11	55%	df= 6
	f)	25 to 30	1	5%	N.S	9	45%	N.S
	g)	Above 30	1	5%		0	0%	
S. No	**Demographic variables**		**Experimental group (n=20)**			**Control group (n=20)**		
			F	**%**	**χ^2**	**F**	**%**	**χ^2**
7.	**No. of hospitalization**							
	a)	Below 3days	16	80%	χ^2=0.3	17	85%	χ^2=3.194
	b)	5 Days	4	20%	df= 6	3	15%	df=6
	c)	1 Week	0	0%	N.S	0	0%	N.S
	d)	More than one week	0	0%		0	0%	
8.	**Is the adults taking any antipyretic drugs**							
	a)	Yes	20	100%	χ^2= 0	20	100%	χ^2= 0
	b)	No	0	0%	df= 2	0	0%	df= 2
					N.S			N.S

*** p>0.05-non significant.**

TABLE 5:

The above table 5 shows that none of the demographic variables had shown statistically significant association with pre test level of body temperature among adults with fever in experimental and control group.

CHAPTER-V

DISCUSSION

The basic aim of this study was to evaluate the effectiveness of warm water foot bath therapy on level of temperature among adults with fever in Raghav Hospital, Appakudal at Erode.

The study was conducted by using a quasi-experimental pre test and post test design with control group. The samples were selected from the unit of general ward and special ward in Raghav Hospital for conducting the study. The sample size was 40 among which 20 samples were in experimental group and 20 samples in control group. They were selected by using purposive sampling technique.

The structured self administered questionnaire was used to assess the demographic variables among adults with hyperthermia. The clinical thermometer and the glass thermometer was used as the instrument to measure the level of temperature. The demographic variables were analyzed by using descriptive measures (Frequency and Percentage). The responses were analyzed by using inferential statistics (paired t' unpaired t test).Association between the levels of temperature and selected demographic variables were analyzed by using χ^2test. Discussion on the findings were arranged based on the objectives of the study.

The first objective of the study was to assess the pre test and post test level of body temperature among adults with fever in the experimental and control group.

The study findings showed that in the experimental group, in pre test 6[30%] adults had low grade fever, 14[70%] adults had pyrexia. Whereas, in the post test 14[70%] adults had normal body temperature,6[30%] adults had low grade fever. In control group, in pre test 10[50%] adults had low grade fever 10[50%] adults had pyrexia. In post test 7[35%] adults had low grade fever,13 [65%] adults had pyrexia. From the above finding it is clear that there has been a significant difference between pre and post test level of body temperature in adults with fever.

These findings are similar to the study findings of Priscilla M.S [2008] who conducted an experimental study to evaluate the effectiveness of warm water foot bath therapy on level of temperature among 60 adults by adopting purposive sampling

technique, which revealed that there is significant different between the mean pre and post test level of temperature in two groups.

The second objective of the study was to compare the changes in the temperature with experimental and control group, after warm water foot bath therapy.

The present study results revealed that among, the experimental group, the mean pre test score of temperature was 101.29 with standard deviation 0.752.whereas, the mean post test score of temperature was 98.87 with standard deviation of 0.5813.The obtained `t` value 7.45 was significant at $p<0.05$ level.

In control group the mean pre test score of temperature was 100.5 with standard deviation 0.110.whereas, the mean post test score of temperature was 101.04 with standard deviation of 0.482.the obtained `t` value 4.437 was significant at $p<0.05$ level.

The study shows that among experimental group, the mean post test score was 98.87 with standard deviation 0.5813.among control group, the mean post score was 101.04 with standard deviation 0.482.the calculated mean difference was 2.04 and obtained `t` value 6.2111 was significant at $p<0.05$ level. From above the findings revealed that warm water foot bath therapy was more effective in reducing level of body temperature among adults with fever.

The study findings are similar to the study findings of Jini mary Mathew(2011) who conducted a quasi experimental study to assess the effectiveness of warm water foot bath therapy on temperature among 100 patients by adopting the randomized sampling technique. In this study the mean post test score was 98.85 with standard deviation 0.920.The calculated mean difference 2.21 and the obtained `t` value 10.936 was significant at $p<0.05$ level. This revealed that the warm water foot bath therapy was effective in reduction of body temperature.

The third objective of the study was to determine the association of changes in temperature with selected demographic variables in both groups.

The study findings revealed that in experimental group there was no significant association the level of temperature among adult with fever and their selected

demographic variable such as age, gender, religion, weight, height, BMI, no of hospitalization, is the patient taking antipyretic drug.

.The study findings revealed that in control group there was no significant association level of temperature among adults with fever and their selected demographic variable such as age, gender, religion, weight, height, BMI, no of hospitalization, is the patient taking antipyretic drug.

CHAPTER VI

SUMMARY AND CONCLUSION AND RECOMMENDATIONS

This chapter presents a brief account of the present study. It deals with the summary, conclusion and recommendations of the study. Conclusions are drawn from the findings and the implications of the results for nursing practice, nursing education, nursing research and nursing administration are stated.

Summary

The present study was to evaluate the effectiveness of warm water foot bath therapy on reducing the level of temperature among adults with fever in Raghav Hospital Appakudal at Erode.

The objectives of the study were,

1. To assess the pre test post test level of body temperature among adults with fever in the experimental group and control group.

2.To compare the changes in the temperature with experimental and control group after warm water foot bath therapy.

3.To determine the association of changes in temperature with selected demographic variables in both group.

A quasi experimental pretest and posttest design with control group was

chosen for this study without randomization. A non-probability purposive sampling technique was adopted to select samples with inclusion criteria. The sample size was 40, among them, 20 were in experimental group and 20 were in control group. Clinical thermometer was used to assess the level of body temperature of adults with fever.

Its consist of

SECTION-1

Dealt with demographic variables of adult with fever such as age gender,religion weight , height ,BMI, no of days in hospitalization, of the adults.

SECTION-2

Dealt with clinical thermometer which was used to check the level of body temperature.

MAJOR STUDY FINDINGS

The study findings showed that in the experimental group, in pre test 6[30%] adults had low grade fever 14[70%] adults had pyrexia. Whereas, in the post test 14[70%] adults had normal body temperature,6 [30%] adults had low grade fever. In control group, in pre test 10[50%] adults had low grade fever 10[50%] adults had pyrexia. In post test 7[35%] adults had low grade fever, 13 [65%] adults had pyrexia. From the above finding it is clear that there has been a significant difference between pre and post test level of body temperature in adults with fever.

The present study results revealed that among the experimental group, the mean pre test score of temperature was 101.29 with standard deviation 0.752.whereas the mean post test score of temperature was 98.87 with standard deviation of 0.5813.the obtained `t` value 7.45 was significant at $p<0.05$ level.

In control group the mean pre test score of temperature was 100.5 with standard deviation 0.110.whereas the mean post test score of temperature was 101.04 with standard deviation of 0.482.the obtained `t` value 4.437 was significant at $p<0.05$ level.

The study shows that among experimental group, the mean post test score was 98.87 with standard deviation 0.5813.among control group, the mean post score was 101.04 with standard deviation 0.482.the calculated mean difference was 2.04 and obtained ` t` value 6.2111 was significant at $p<0.05$ level. From above the findings it is revealed that warm water foot bath therapy was more effective in reducing level of body temperature among adults with fever. Hence the stated (H_1) is accepted.

The calculated chi square values of for the type of ward were found to significant at $p<0.05$ level. Hence it is inferred that type of ward have significant association between the level of temperature among adults with fever. Hence the hypothesis (H_2) is accepted

CONCLUSION

The main conclusion drawn from the present study was that most of the adults with fever had low, moderate, high temperature. After receiving the warm water foot bath therapy, level of body temperature was reduced significantly. Samples became familiar and found themselves comfortable and also expressed satisfaction. It is thus concluded that the warm water foot bath therapy is effective in reduction on level of temperature among adults with fever.

Implications of the study

According to Tolsma (1995) section of the research report that focuses on nursing implication usually includes specific suggestions for nursing practice, nursing education, nursing research ad nursing administration Nursing implication for this study is enlisted below:

Nursing Practice

Clinical nurse can:

- appreciate the importance of warm water foot bath therapy.
- demonstrate the procedure of warm water foot bath therapy.
- recognize the findings of the current study which can be a baseline for

providing instructions to adults and family members.

- encourage the care gives to use warm water foot bath therapy as a

complementary therapy for patients with hyperthermia.

- suggest this simple technique for preventing further complications among

adults with fever.

Nursing Education

Nurse educators can:

- Teach the importance of warm water foot bath therapy for the students.

- Demonstrate the procedure of warm water foot bath therapy to the students.
- Encourage and bring into practice the warm water foot bath therapy in clinical posting.

Nursing Researcher

Nurse researcher can

- Add to the research review about the importance of warm water foot bath therapy on level of temperature among adults with fever.
- Disseminate the findings through journals and publications.
- The study findings help in expanding the scientific body of professional knowledge upon which further research can be conducted.

Nursing Administration

Nurse administrator can:

- organize in service education programs for the nurses on this complementary technique.
- make cost effectiveness on the nursing care by reducing the usage of antipyretics among adults with fever.
- develop a written protocol on methods of warm water foot bath therapy implication.
- distribute the educational pamphlets, that contains information on reducing body temperature in adults with fever by warm water foot bath therapy, it can be given to nursing staffs and in turn taught to pateints. It helps to motivate them to develop the healthy practices.

Recommendations

- The same study can be conducted in different settings such as community, hospital and clinics etc.
- The study can be replicated in large sample size.
- The study can be conducted on children of different age group.
- Effectiveness of this technique can be compared with other complementary therapies to find its effectiveness.

- The same study can be conducted in adults and different age people.
- The same study can be conducted with time series one group pretest post test design.

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TOOLS

Section – 1

I .Demographic Variables

1. Age in years

A. 20 to 30 years.

B. 30 to 40 years.

C. 40 to 50years.

2. Gender

A. Male.

B. Female.

C. Transgender

3. Religion

A. Hindu

B. Christian

C. Muslim

D. Others

4.Weight

A. Below 50kg.

B. 50 to 60kg.

C. 61 to 70kg.

D. 70 and above.

5.Height

A. Below 120

B. 121 to 140cm.

C. 141 to 160cm.

D. 160 and above.

6.BMI Category

A. Below 18.5

B. 18.5-24.9

C. 25-30

D. Above 30

7.How many days the adult is in Hospitalization?

A. 3 Days .

B. 5 days

C. 1 Week

D. More than one week

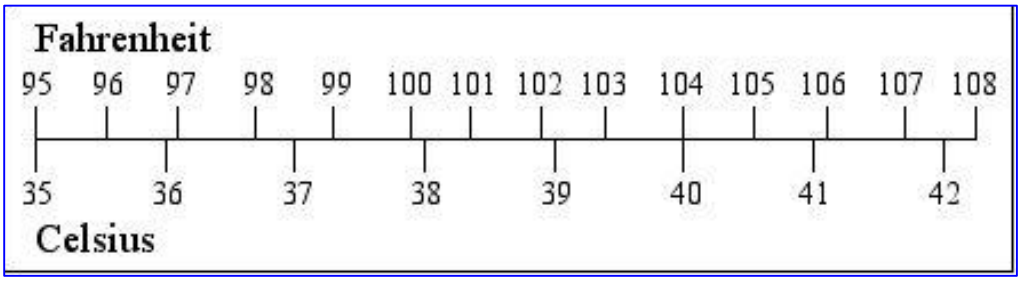
8.Is the Adult taking any antipyretic drugs?

A. Yes

B. No

Section –II

SCORING KEY



Observational Scale

Normal	97-99^0 F (36-37^0 C)
Low grade	99-100.4^0 F(37.2-38^0 C)
Pyrexia	Above 100.4-105^0 F(38-41^0 C)

fharry Fwpjjeyffyt

tiuaiw: -

ek cly;y f;Uk;fs teJt;llhy ek Neha vj;hgGnrayfs mtwiwmilahsk fzL>mitfisvj;hjJg NghuhLk mgNghJ cly nts;a;Lk ntggNkfharry vdggLk.

fhuz;fs: -

- cly;y njhwW VwgLjy (v.fh) itu] njhwW>jllkik> rs;f fharry>
- KlfFthjk
- cly;y eh;ogG
- kUeJfs
- kJt;y;UeJt;LgLjy
- fhye;iykhwwk

mw;Fw;fs :

- cly;d ntgge;iymj;fh;jjy
- cly ty;
- cly NrhhT
- jiyty;
- thej;naLjjy
- gr;a;dik
- cly;y eh ,ogG
- ehfNfhgG (rs;))

fzlw;Ak Kiw

ntggkhd;gadgLjj;cly;d ntgge;iyiafzlw;ayhk.

FzggLjJk Kiw

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- rhjhuzehpy Fspjjy
- fhwNwhllk cssmiwapy Nehahspiaitjjy
- fhlld cilfismzpjy

fharry tUtijj jLfFk Kiw

- rpwejKiwapy iffOTk Kiwiaifahsntz Lk.
- jd Rjjk Kiwiaifahsntz Lk.
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- mjpfmsTfharrpaeiuFbffNtz Lk.
- vspjhf [uzkhff $baczTfisvLjJf nfhssNtz Lk.
- GujrrjJczTg nghUlfismjpfkhfvLjJf nfhssNtz Lk.
- itllkpd›goqfs›fhafwpfs kwWk gorrhWmjpfkhfvLjJf nfhssNtz Lk.
- fhukhdkwWk mirtk czTfs vLjJf nfhstijj jtphffNtz Lk.
- Njeh kwWk fhgpFbggijj jtphffNtz Lk.

CERTIFICATE BY THE EDITOR

This is to certify that the dissertation entitled: A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATER FOOT BATH THERAPY ON ADULTS WITH FEVER ADMITTED IN RAGHAV HOSPITAL, ERODE DISTRICT is a bonafide research work doen by NISHA.R, M.Sc., (Nursing) II Year (Branch I Medical Surgical Nursing) Post Graudate degree student of Dharmarathnakara Dr.Mahalingam Institute of Paramedical Sciences and Research, Sakthinagar, Bhavani Taluk, Erode District. Edited this manuscript on behalf of the partial fulfillment of the pre requisite for the degree of master of sciences in Nursing (Medical Surgical Nursing).

Date :

Place :

Signature of the editor

PROCEDURE

WARM WATER FOOT BATH THERAPY

Definition:

Warm water foot bath therapy is a local immersion bath covering the feet and angles at temperature ranging from 100-115^0 F.

Indication:

- Cold feet
- Chest congestion
- Flu
- Pelvic inflammatory disease
- Headache
- Pelvic cramps
- Hemorrhoids
- Prostate problems

Contraindication:

- Obstructive and circulatory disturbances
- Diabetics
- Peripheral vascular disease
- Any condition where circulation in feet and legs are poor(like extreme vascular disease feet and legs) or where there is a loss of sensation in feet or legs.

Equipment:

- Foot tub or bucket
- Lotion thermometer
- Clinical thermometer
- Blanket
- Rubber sheets
- Jug two

Procedure:

- Explain the procedure to the patient.
- Have room warm and free of drafts.
- Assemble the material to the bed side.
- Protect the bedding if needed.
- Drape the two blankets over a chair or spread on a bed.
- Fill bucket with water 100-115^{0}F (43-46^{0}C)
- High enough to cover ankles.
- Assist the patient in un dressing and rapping sheet.
- Assist the patient to place feet in tub. reassure patient by putting your hands in the water first.
- Add hot water as patient can tolerate it, up to 120^{0}F(49^{0}C)
- Continue treatment for 5-30 minutes as needed, keeping cold compress on the patient head.
- Raise feet out of tub, pour ice water over the feet, try feet and thighs. dress in bed cloth.
- The patient allowing them to rest in bed for at least 30 minutes, drinking lots of water.

LIST OF EXPORTS:

1.Mrs. Grazy,M.Sc (Nsg),P.Hd.,
Hod of Medical Surgical Nursing
Dhanvantri college of Nursing
Ganapathypuram,
Pallakkapalayam.

2.Mrs.Gowri ,M.Sc Nursing.,
Hod of Medical Surgical Nursing,
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Kumarapalayam.

3.Mrs.chandramathi,M.Sc Nursing.,
Hod of Medical Surgical Nursing
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Pallakkapalayam.

4.Mr.Dhanapal,M.Sc Maths
Department of statistical.

5.Dr.Senthil Kumaran MD.Dip. A&E, FCCM, Ph.D.,
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Be Well Hospital, Erode (DT).

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LETTER SEEKING PERMISSION TO CONDUCT PILOT STUDY

From

MS.NISHA, M.Sc., (N) II Year,
(Speciality – Medical Surgical Nursing),
Dr. Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK), Erode (DT),
Tamilnadu.

To

PRINCIPAL,
COLLEGE OF NURSING
Dharmarathnakara Dr.Mahalingam Institute
of Paramedical Sciences and Research,
(Sri Adichunchanagiri Shikshana Trust)

Respected Sir / Madam,

SUB : Permission to conduct study - Reg.

- - - - -

I, the II year M.Sc., Nursing student of Dr. Mahalingam College of Nursing, Sakthi Nagar. As a partial fulfillment of Master of Science in Nursing, I have undertaken the following research study, which has to be submitted to The Tamilnadu Dr.M.G.R. medical University, Chennai.

RESEARCH STUDY:

"A STUDY TO EVALUATE THE EFFECTIVENESS OF WARM WATER FOOT BATH THERAPY ON ADULTS WITH FEVER ADMITTED IN RAGHAV HOSPITAL, APPAKUDAL, ERODE DIST"

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Date : .....

I kindly request you to permit me to conduct the study on Warm water foot bath therapy on adults with fever admitted at your esteemed hospital with effect from ---------- to ----------.

I kindly request you to permit me to conduct the proposed study. Please, kindly do the needful.

Thanking you,

Date :

Yours Sincerely,

Place :

(NISHA R)

Dr. S. SENTHILKUMARAN,
M.D., Dip. A & E, FCCM, Ph.D.,
Reg. No: 66817
Head, Dept. of Emergency & Critical Care,
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MS.NISHA R, M.Sc.,(N) II Year,
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Tamilnadu.

To

----------,
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Through,

The Principal,
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Sakthi Nagar (Po),
Bhavani (TK), Erode (DT).

PRINCIPAL,
COLLEGE OF NURSING
Dharmarathnakara Dr.Mah. lingam Institu
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Thanking you,

Date :

Yours Sincerely,

Place :

(NISHA R)

Dr. P.SELVAN, M.S., (Gen. Surgeon)
Reg No: 72323
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Appakudal - 638 315.

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From

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Sakthi Nagar (Po),
Bhavani (TK), Erode (DT),
Tamilnadu.

To

----------,
----------,
---------- .

Through,

The Principal,
Dr. Mahalingam College of Nursing,
Sakthi Nagar (Po),
Bhavani (TK), Erode (DT).

PRINCIPAL,
COLLEGE OF NURSING
Dharmarathnakara Dr.Mahalingam Institute
of Paramedical Sciences and Research,
(Sri Adichunchanagiri Shikshana Trust)

Respected Sir / Madam,

SUB: Request for the Validation of the tool.

- - - - - -

I, the II year M.Sc., Nursing student of Dr. Mahalingam College of Nursing, Sakthi Nagar. As a partial fulfillment of Master of Science in Nursing, I have undertaken the following research study, which has to be submitted to The Tamilnadu Dr.M.G.R. Medical University, Chennai.

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To achieve the objective of dissertation, I have prepared the Demographic data. With regard to this, I kindly request you to go through the tools and validate it against the given criteria and render your valuable suggestions that will keep in improving the study at an earliest.

Thanking you in anticipation,

Yours Sincerely,

(NISHA R)

Enclosures:

1. Demographic data
2. Criteria check list for evaluation of tool
3. Content validity certificate for tool.
4. Self addressed cover.

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Date:

Place:

K. [illegible]

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Professor of Statistics

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